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CONTRIBUTIONS FROM THE GRAY HERBARIUM OF  
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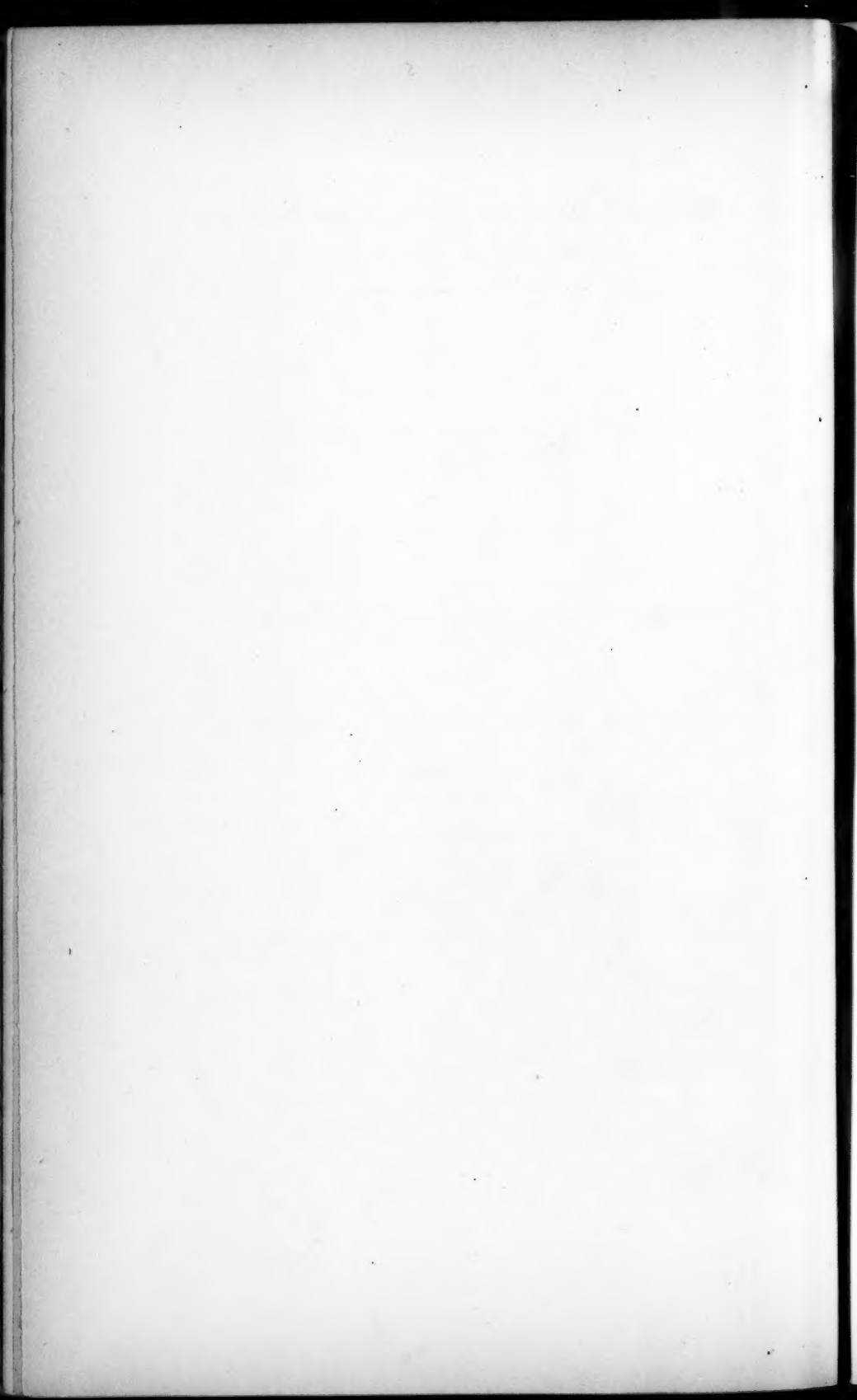
NEW SERIES. — No. XXIV.

(PAPERS FROM THE HOPKINS-STANFORD EXPEDITION  
TO THE GALAPAGOS ISLANDS.)

*FLORA OF THE GALAPAGOS ISLANDS.*

By B. L. ROBINSON.

(With the collaboration of specialists.)



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UNIVERSITY, NEW SERIES, NO. XXIV.

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FLORA OF THE GALAPAGOS ISLANDS.

THE peculiar character of the vegetation on the Galapagos Islands was brought to scientific attention in 1847 by Sir Joseph Dalton Hooker. His flora of the archipelago, based chiefly upon the collections of Charles Darwin, showed clearly that these islands, although small in extent, volcanic in character, and only five hundred to six hundred miles from Ecuador, possess a vegetation striking in individuality and very unlike that of the adjacent mainland. Darwin, who visited the Galapagos on the memorable voyage of the "Beagle," landed on four of the islands (Chatham, Charles, James, and Albemarle). He was able to spend only a few days upon each, and naturally much of his attention was devoted to the general topography, the geology, and especially the peculiar fauna; moreover the season was one of drought; yet he was able to collect 201 different plants. These, supplemented by smaller collections (chiefly those of Douglas & Scouler, Macrae, and Edmonston), enabled Hooker to include in his enumeration 239 species, of which no less than 107 were described as new to science, thus indicating an extraordinary endemic element of nearly forty-five per cent of the whole flora of the islands, a proportion which became still more remarkable when the imperfectly represented thallophytes, and certain phanerogams, believed to be artificially introduced weeds, were omitted from consideration.

In 1852 Prof. N. J. Andersson, well known for his critical studies in *Salix*, visited the Galapagos Islands on a voyage of the Swedish frigate "Eugenie." He landed upon five of the islands, four of them being the same as those visited by Darwin, and the fifth (Indefatigable) until then entirely unknown botanically. The sailing schedule of his vessel permitted him to remain but a few hours upon some of the islands, and upon none more than two or three days. Nevertheless, he was able to secure an excellent collection of plants, including 338 numbers, many

of which were represented by several specimens. These plants, critically determined by Andersson himself and distributed to the leading herbaria of various countries, have long furnished the chief reference specimens for the interesting vegetation they represent. In 1853 Andersson published a detailed flora of the islands, and in 1857 he republished the same work in revised form and well illustrated.

Since the appearance of these classical papers by Hooker and Andersson, there has been no general revision of the Galapageian flora. The islands have been visited, however, and plants collected upon them, — in 1868–1869 by Dr. A. Habel, in 1871 by the Hassler Expedition under the direction of Professor Louis Agassiz, in 1875 by Dr. Theodor Wolf, in 1884 by Lieutenants Chierchia and Marcacci, in 1888 by Professor Leslie A. Lee, in 1891 by Mr. Alexander Agassiz, also by the late Dr. Georg Baur and his assistant, Mr. C. F. Adams, and finally by Messrs. Robert E. Snodgrass and Edmund Heller of the Hopkins-Stanford Expedition. Not only have these collectors secured much additional material from the five larger islands, visited by Darwin and Andersson, but many specimens are now at hand, chiefly through the efforts of Dr. Baur and Messrs. Snodgrass and Heller, to illustrate the florulae of no less than twelve of the smaller islands, of which nearly all include new and peculiar species or forms. Furthermore, since the appearance of Andersson's works there have been many scattered notes, in monographic treatments of families and genera, throwing new light upon the identity, affinities, and nomenclature of Galapageian plants. It has therefore seemed desirable during the study of the rich botanical collections secured by the Hopkins-Stanford Expedition and referred by the Zoölogical Department of Stanford University to the Gray Herbarium for examination, to undertake a general recension of the flora of the Galapagos Islands, and to bring together its now more extensive bibliography, synonymy, and records of distribution. This has appeared the more worth while because some of the species regarded as new in the earlier treatments of the flora have dropped into synonymy and others formerly supposed peculiar to the islands are now known to occur in other regions; so that without a comprehensive revision it would be well nigh impossible to draw any statistical summary or show (1) in how far the vegetation of the archipelago is really peculiar, (2) to what other floras it is most nearly related, and (3) the complicated affinities existing between the florulae of the different islands. Finally, to these incentives there has been added a wish to derive, if possible, new light upon the origin of the islands themselves.





I am greatly indebted to my colleague, Professor W. G. Farlow, for the treatment of the difficult orders of *Fungi*, *Lichenes*, *Algae*, and *Musci*, to Dr. A. W. Evans of Yale University for the treatment of the *Hepaticae*, and to Professor K. Schumann of the Royal Botanical Museum at Berlin for the elaboration of the *Cactaceae* of the Hopkins-Stanford Expedition. Further expert assistance has been kindly and very promptly given by Mr. Casimir de Candolle of Geneva (*Peperomia*), Mr. C. B. Clarke of Kew (*Kyllinga*), Professor A. Cogniaux of Verviers (*Miconia*), Professor F. Lamson-Scribner of the United States Department of Agriculture (*Chloris*), Dr. Gustav Lindau of Berlin (*Justicia*), and Dr. Hans Hallier of Hamburg (*Ipomoea*). I am likewise indebted to Sir W. T. Thiselton-Dyer and Mr. W. Botting Hemsley for some comparisons at the Royal Gardens at Kew and for a list of the plants collected upon the Galapagos Islands by Dr. A. Habel. Mr. F. V. Coville and Dr. J. N. Rose of the United States National Museum have generously furnished me with duplicates of many of the plants secured on the Galapagos and Cocos Islands by Messrs. A. Agassiz and Lee, and also sent several unicates for examination. Professor William Trelease has obligingly forwarded the Galapageian *Cactaceae* from the Engelmann Herbarium for comparison. Sir J. D. Hooker has kindly given me interesting data concerning the history of the botanical exploration on the islands, Mr. J. Henry Blake, artist on the "Hassler," has furnished information regarding that expedition, and Miss Mary A. Day, librarian of the Gray Herbarium, has rendered efficient assistance in bibliography and tabulation as well as in an exhaustive search for information relating to the early expeditions to the islands. The plates have been drawn by Mr. F. Schuyler Mathews.

The bryophytes and thallophytes, as yet known to occur on the Galapagos Islands, are so few that they cannot be supposed in any adequate sense representative of the great groups to which they belong. It has, therefore, seemed best to exclude them from the tabular statistics. It may be remarked, however, that their inclusion would not have significantly altered the numerical relations presented.

Of the following plants, said to have been collected on the Galapagos Islands by Dr. Habel, the identifications (which cannot now be controlled by a reëxamination of the specimens) have seemed too doubtful to include in the catalogue: *Boerhaavia diffusa*, L., *Neptunia triquetra*, Benth., *Rhynchosia Senna*, Gillies, *Stylosanthes humilis*, HBK., *Tribulus terrestris*, L. var., *Acalypha parvula*, vars., *Waltheria ovata*, Cav., and *Evolvulus alsinoides*, L. var.

From Table I, reviewing the exploring expeditions which have done

botanical collecting upon the Galapagos Islands, it will be seen that plants have been secured under no less than 2300 numbers and that about two-thirds of these have been examined during the preparation of this paper. With the exception of two cacti in the Engelmann Herbarium I have been unable to locate the phanerogams said to have been collected by Dr. Thomas Hill on the Hassler Expedition, and I should be greatly obliged for any information regarding their disposition.

Although great pains have been taken to summarize in this paper every bit of available information regarding the flora of these islands, which have now been visited by more than a score of collectors, it must be admitted that our knowledge of the subject is still very incomplete. With all due appreciation of the valuable and self-sacrificing services which zoölogists and geologists have rendered in collecting plants in the Galapagos, it should be remembered, when interpreting the general results, that during the last half century the islands have been visited by only one trained botanical systematist and by him very hurriedly. It cannot be doubted that much remains to be done in exploring and recording the Galapageian flora, and it is to be earnestly hoped that future collectors will endeavor to secure *specimens* of *each* plant from *every* island, since these insular races are in many cases so similar that mere lists, based upon hurried field determinations, are almost valueless.

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- (2) Om Galapagos-öarnes Vegetation. 1857, pp. 114, t. 1-16. (Although this paper is dated 1857, a paper published in 1859 is cited by it on p. 89.)
- (3) Ueber die Vegetation der Galapagos-inseln. Linnæa, xxxi. 1861, pp. 571-631.
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- (5) The Cactaceae of the Galapagos Islands. *Gard. Chron.* ser. 3, xxiv. 1898, p. 265, fig. 75.
- (6) In Hook. *Icones Plantarum*, xxviii. 1901, t. 2715-2719.
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## FUNGI.

By W. G. FARLOW.

## FAVOLUS, Fries.

**F. CILIARIS**, Mont. Ann. Sci. Nat. Bot. ser. 2, xx. 364, t. 15, f. 2 (1843). — NARBOROUGH ISL.: southern part, alt. 615 m., Apr. 1899, *Snodgrass & Heller* (a single specimen). Further distrib. Madagascar and Japan.

## FOMES, Fries.

F. LUCIDUS, Fries, Nov. Symb. 61 (1855). *Boletus lucidus*, Leysser, Fl. Hal. 300 (1783). — ALBEMARLE ISL.: Tagus Cove, Snodgrass & Heller. Further distrib. general.

## SCHIZOPHYLLUM, Fries.

S. ALNEUM, Schroeter, Pilz. Schlesien, i. 553 (1889). *S. commune*, Hook. f. (3), 164; Anderss. (1), 123, & (2), 35. *Agaricus alneus*, L. Sp. 1176 (1753). — CHARLES ISL.: Darwin acc. to Hook. f., l. c. Further distrib. general.

Besides the *Favolus* and *Fomes* above mentioned, the collection of Messrs. Snodgrass & Heller contains a small dried *Polyporus* and a dried agaric, also alcoholic material of two *Agaricini* and a small tremelline fungus; none of these being in condition to determine.

## LICHENES.

By W. G. FARLOW.

Judged by the collections of previous expeditions as well as those of Messrs. Snodgrass & Heller, the lichen flora of the Galapagos Islands must be striking in appearance and abundant. Naturally the collections include principally the larger and more showy species of foliose and fruticulose habit, which are in most cases identical with species found along the Pacific Coast of America from California to Chili. Hooker (3), 164, records three lichens collected by Darwin on James Island; Andersson secured nine species from James and Chatham Islands, and Baur six from Charles, Albemarle, Hood, and Chatham Islands. The lichens collected by Hill on the Hassler Expedition were determined by Tuckerman and included three new species, *Lecanora glaucovirens*, *Rinodina mamillana*, and *Pertusaria albinea*, the second species having been found previously in Hawaii. Willey in his Synopsis of the Genus *Arthonia*, 1890, described an *Arthonia nivea* from the Galapagos Islands (collected by Hill), and reported *A. platyspeilea* Nyl., as well as a third unnamed species. The last was sent to Nylander, but I am unable to ascertain whether it was ever named by him. Apparently a considerable number of lichens were collected by the Hassler Expedition, but no list of them was ever made so far as I am aware, and as the specimens are scattered through the Tuckerman Herbarium no enumeration could be made without a long search. In the following catalogue reference is made to such of these specimens as have come under my notice.

## ARTHONIA, Ach.

A GREGARIA, Koerb. Syst. 291 (1855); Willey, Synop. of gen. Arthonia, 7. *Sphaeria gregaria*, Weig. Obs. Bot. 43, t. 2, f. 10 (1772). — DUNCAN ISL.: on twigs, May, 1899, *Snodgrass & Heller*. Cosmopolitan.

A. NIVEA, Willey, Synop. of gen. Arthonia, 5 (1890). — GALAPAGOS IDS.: Hassler Exped. [*Hill*]. Endemic.

A. PLATYSPEILEA, Nyl. Pr. N. Gr. 99 (1863); Willey, Synop. of gen. Arthonia, 16. — GALAPAGOS IDS.: Hassler Exped. [*Hill*] acc. to Willey, l. c. GARDNER ISL.: May, 1899, on twigs with *Pyrenula cerina*, *Snodgrass & Heller*. Also found in Florida.

A. sp. Willey, Synop. of gen. Arthonia, 41 (1890). — GALAPAGOS IDS.: Hassler Exped. [*Hill*] acc. to Willey, l. c.

## BUELLIA, De Not.

B. *straminea*, Tuck. in herb. — ALBEMARLE ISL.: north of Pt. Christopher, 21 Jan. 1899, *Snodgrass & Heller*.

This small specimen of a crustaceous *Buellia* on a volcanic rock is identical with a large specimen in herb. Tuckerman, Galapagos Ids., Hassler Exped. [*Hill*] which is labelled *B. straminea*, Tuck., which, however, appears never to have been described. Why it was never published may perhaps be due to the fact that there is another specimen in herb. Tuckerman from the Galapagos Ids., Hassler Exped. [*Hill*], marked *B. flavo-areolata*, Nyl. and that Tuckerman was in doubt whether *B. straminea* was distinct from that species. There is, however, no note of Tuckerman stating his opinion. The *Snodgrass & Heller* lichen agrees perfectly with the specimen of *B. straminea*. In both the asci are obovate, 32–42  $\mu$  by 14–17  $\mu$ ; spores fuscous, 2-celled, 11  $\mu$  by 8–9  $\mu$ ; paraphyses hyaline, 2  $\mu$  in diam., branching only at the apex where they end in globose tips, 5  $\mu$  in diam., the upper half of which is dark colored. Iodine turns the hymenium blue. The specimen of *B. flavo-areolata* in herb. Tuckerman differs only in having spores rather larger and narrower, those of *B. straminea* being nearly globose, in which respect it corresponds better with the description of *Lecidea flavo-areolata*, Nyl., Ann. Sci. Nat. Bot. ser. 4, iii. 166 (1855). It seems to me probable that the two species are really the same, but in the absence of material to show the variations of the spores, it can only be said that our lichen is certainly *B. straminea* which differs from *B. flavo-areolata* in the shorter and comparatively broader spores.



*B. sp.* — BINDLOE ISL.: on rocks, 20 June, 1889, *Snodgrass & Heller*.

A single specimen agreeing with some of the specimens referred to *B. lactea* in herb. Tuckerman, but it is not certain how far these agree with the views of other lichenologists.

#### CHIODECTON, Ach.

*C. SANGUINEUM*, Wainio, Lichens du Brésil, ii. 143 (1890). *Byssus sanguinea*, Sw. Prodr. Fl. Ind. 148 (1783). *Hypochnus rubrocinctus*, Ehrh. Hor. Phys. Berol. 84 (1820). — ABINGDON ISL.: alt. 250 m., 25 June, 1899, *Snodgrass & Heller*. Widely distributed in the warmer parts of the world.

#### CLADONIA (Hill) Wainio emend.

*C. PYCNOCLADA*, Nyl. Jour. Linn. Soc. ix. 244 (1866). *Cenomyce pycnoclada*, Gaudichaud, Ann. Sci. Nat. Bot. v. 95 (1825). *Cladonia rungiferina*, var. auct. var. — ALBEMARLE ISL.: mountain east of Iguana Cove, alt. 925 m., Feb. 1899, *Snodgrass & Heller*; mountain east of Tagus Cove, alt. 770 m., Feb. 1899, *Snodgrass & Heller*. Further distrib. S. Am., Africa, Asia, Australia.

#### LECANORA, Ach.

*L. GLAUCOVIRENS*, Tuck. Proc. Am. Acad. xii. 172 (1874). — GALAPAGOS IDS.: Hassler Exp. [*Hill*]. Endemic.

#### PARMELIA, Ach.

*P. PERLATA*, Krmph. Flora, lii. 222 (1869); Anderss. (1), 124, & (2), 36. — ABINGDON ISL.: *Snodgrass & Heller*. ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*. CHARLES ISL.: *Andersson* (specimen not seen by the writer). The specimens of Messrs. *Snodgrass & Heller* are small and sterile but appear to belong to this common species.

*P. sp.* (*P. physodi*, Fries affinis) *Andersson* (1), 124, & (2), 36. — CHARLES ISL.: *Andersson*. Sterile and indeterminate, not seen by the writer.

#### PERTUSARIA, DC.

*P. ALBINEA*, Tuck. Proc. Am. Acad. xii. 177 (1877). — GALAPAGOS IDS.: on bark, Hassler Exp. [*Hill*]. Endemic.

#### PHYSICIA (DC.) Th. Fr.

*P. LEUCOMELA* (L.) Michx. Fl. Bor.-Am. ii. 306 (1803). *Lichen leucomelas*, L. Sp. ed. 3, 89 (1764). *Parmelia leucomela*, auct. var.

*P. leucomela*, var. *filiformis*, Anderss. (1), 124, & (2), 36. *Borrera leucomelas*, var. *filiformis*, Hook. f. (3), 164. — JAMES ISL.: Darwin, acc. to Hook. f., l. c. who states that "the same slender variety is common on the Peruvian Coast."

#### PSEUDOCYPHELLARIA, Wainio.

*P. AURATA*, Wainio, Lichens du Brésil, i. 183 (1890). *Sticta aurata*, Ach. Meth. Lich. 277 (1803); Hook. f. (3), 164; Anderss. (1), 124, & (2), 36. — ALBEMARLE ISL.: mountain east of Iguana Cove, alt. 925 m., Feb. 1899, *Snodgrass & Heller*. JAMES ISL.: Darwin. NARBOROUGH ISL.: southern part, alt. 615 m., March, 1899, *Snodgrass & Heller*. Further distrib. general.

#### PYRENULA, Fée.

*P. CERINA*, J. Muell, Flora, lxvii. 667 (1884). *Verrucaria cerina*, Eschw. Bras. 133 (1833). *Pyrenula aurantiaca*, Fée, Suppl. 82, t. 37, f. 1 (1837). — NARBOROUGH ISL.: southern part, alt. 615 m., 5 April, 1899, *Snodgrass & Heller*. On branches of the palo santo (*Bursera graveolens*) with spermagonia and spores. The latter are obtusely elliptical,  $28\mu$  by  $14\mu$ , at first hyaline and multiguttulate but becoming dark and 4-celled. Further distrib. Bermuda, S. Am.

#### RAMALINA, Ach.

*R. COMPLANATA*, Ach. Lich. Univ. 599 (1810). *Lichen complanatus*, Sw. Fl. Ind. Occ. iii. 1911 (1806). — GALAPAGOS IDS.: Hassler Exp. [Hill]. CHARLES ISL.: Cuevas Bay, Baur. GARDNER ISL.: May, 1899, *Snodgrass & Heller*. HOOD ISL.: May, 1899, *Snodgrass & Heller*. TOWER ISL.: June, 1899, *Snodgrass & Heller*. Further distrib. warmer parts of America, East Indies, Australia.

*R. INDICA*, Fr. Kongl. Vet. Ak. Handl. 43 (1820); Anderss. (1), 123, & (2), 35. — CHARLES ISL.: on trunks of trees in the upper region, *Andersson*. Not seen by the writer. Further distrib. India.

*R. USNEOIDES*, Fr. Lich. Eur. 468 (1831). *Parmelia usneoides*, Ach. Meth. Lich. 270 (1803). — BINDLOE ISL.: 20 June, 1899, *Snodgrass & Heller*, a small form. A characteristic species of the warmer regions of America. A specimen in herb. Tuckerman collected on the Galapagos Ids. by the Hassler Exp. [Hill], and marked *Alectoria sarmentosa* appears to belong rather to this species.



## RINODINA, Mass.

*R. MAMILLANA*, Tuck. Proc. Am. Acad. vii. 226 (1866), & xii. 174. — GALAPAGOS IDS.: Hassler Exp. [*Hill*]. Further distrib. Oahu, Hawaiian Ids.

## ROCCELLA, DC.

The most striking feature of the maritime lichen flora of the Galapagos Islands as well as of the west coast of America from California southward is the abundance of species of *Roccella* of which very fine specimens were collected by Messrs. Snodgrass & Heller. In most herbaria the *Roccellae* of this region are somewhat vaguely placed under the species *R. fuciformis* and *R. tinctoria*, the complanate forms being referred to the former and the more or less terete forms to the latter. The excellent Monographia Roccelleorum of Darbishire, Stuttgart, 1898, affords the means of a more satisfactory determination. The separation of *Dendrographa* and *Roccellaria* from *Roccella* on the structure of the cortex is well founded. All the specimens of this group collected by Messrs. Snodgrass & Heller belong to the genus *Roccella* proper.

*R. PERUENSIS*, Darb. Bull. Herb. Boiss. v. 763 (1897), & Monogr. Rocc. 47, t. 18, 19, f. 83-88 (1898). *R. Montagnei*, var. *peruensis*. Kremph. Verh. Zoöl. Bot. Gesell. Wien, xxvi. 443 (1876). *R. fuciformis*, C. E. Cummings in Rob. & Greenm. (1), 149, not Ach. — ALBEMARLE ISL.: *Baur*. BARRINGTON ISL.: *Snodgrass & Heller*. CHARLES ISL.: *Baur*. CHATHAM ISL.: *Snodgrass & Heller*. DUNCAN ISL.: *Snodgrass & Heller*. GARDNER ISL.: *Snodgrass & Heller*. HOOD ISL.: *Baur*; *Snodgrass & Heller*. TOWER ISL.: *Snodgrass & Heller*. A considerable number of specimens were collected, none, however, with apothecia. The yellow basal filaments described by Darbishire are present in this species, which grows on shrubs. The specimens are larger and broader than the figures of this species in Darbishire and some resemble more closely his figure of *R. portentosa*, t. 8, f. 32. It may be questioned whether that figure really belongs to *R. portentosa*. In all specimens having this habit there were present the yellow base and lignicolous habitat which indicate *R. peruensis*.

*R. PORTENTOSA*, Darb. Ber. Deutsch. Bot. Gesell. xv. 4 (1897), & Monogr. Rocc. 29, t. 7-11, f. 27-41 (1898). *R. tinctoria*, var. *portentosa*, Mont. in Gay, Pl. Chili, viii. 841 (1852). — BARRINGTON ISL.: May, 1899, *Snodgrass & Heller*. GARDNER ISL.: May, 1899, *Snodgrass &*

*Heller*. JAMES ISL.: *Hill* of the Hassler Exp. (in hb. Tuckerman as *R. tinctoria*). SEYMOUR ISL.: south, May, 1899, *Snodgrass & Heller*. Further distrib. Peru (a specimen in hb. Farlow coll. by Gaudichaud and distrib. as *R. tinctoria*, f. *dichotoma*).

*R. intricata*, C. E. Cummings in Rob. & Greenm. (1), 149, coll. by Baur upon Charles Island, has the cortex of *Roccella* proper and therefore cannot be placed in *Roccellaria* where *R. intricata* properly belongs but is a narrow form of *R. peruensis*. The same may be said of some, but perhaps not all, of the *R. phycopsis*, Hassler Exp. [*Hill*] from the Galapagos Islands in herb. Tuckerman.

#### STICTA, Schreb.

S. WEIGELII, Wainio, Lichens du Brésil, i. 189 (1890). *S. damaecornis*, var. *Weigelii*, Ach. Lich. Meth. 446 (1810). — ALBEMARLE ISL.: Iguana Cove, 30 Dec. 1898, *Snodgrass & Heller*. This is the *S. quercizans*, common throughout the warmer parts of America.

#### TELOSCHISTES, Norm.

T. FLAVICANS, Norm. Gen. Lich., 17, 1852. *T. chrysophthalmus*, var. *flavicans*, Auct.; C. E. Cummings in Rob. & Greenm. (1), 149. *Lichen flavicans*, Sw. Prodr. 147 (1788). *Evernia flavicans*, var. *crocea*, Anders. (1), 123, & (2), 35. — ALBEMARLE ISL.: *Snodgrass & Heller*. CHARLES ISL.: *Andersson*; *Snodgrass & Heller*. CHATHAM ISL.: *Baur*, acc. to C. E. Cummings, l. c. DUNCAN ISL.: *Snodgrass & Heller*. Further distrib. general.

#### USNEA, Dill.

U. ARTHROCLADA, Fée, Ess. Crypt. Écorc. xevii. & ci. 3, f. 4, 5 (1824). — NARBOROUGH ISL.: southern part, alt. 615 m., 5 April, 1899, on palo santo trees (*Bursera graveolens*) with *Ramalina usneoides*, *Snodgrass & Heller*. Further distrib. Brazil.

This has a habit resembling *U. longissima* but stouter. With potash the medulla turns reddish brown, and this fact with the hard and polished cortex often breaking and forming articulations indicates *U. arthroclada*.

U. CERATINA, Ach. Lich. Univ. 619 (1810). *U. barbata*, Ach. f. *ceratina* Schaer, Spec. 505 (1840). — NARBOROUGH ISL.: *Snodgrass & Heller*. Cosmopolitan.

U. PLICATA, Ach. Syn. Meth. 305 (1814); Hook. f. (3), 164; Anderss.

(1), 124, & (2), 36 — CHARLES ISL.: *Andersson*. JAMES ISL.: *Darwin*. Further distrib. general.

## ALGAE.

By W. G. FARLOW.

## CYANOPHYCEAE.

## SCYTONEMA, Agardh.

S. MYOCHROUS, Ag. Disp. Alg. Succ. 38 (1812). *Conferva*, Dillw. Brit. Conferv. t. 19 (1802). — ALBEMARLE ISL.: Mangrove Swamp, Turtle Pt., *Snodgrass & Heller*. Further distrib. general.

## CHLOROPHYCEAE.

## BRYOPSIS, Lamx.

B. RAMULOSA, Mont. Cuba, 16, t. 3, f. 2 (1838). *B. pennatula*, J. G. Agardh, Oefver. Kongl. Vet. Akad. Förh. iv. 6 (1847). — WENMAN ISL.: Dec. 1898, *Snodgrass & Heller*. Further Distrib. W. Ind., Fla.

## CAULERPA, Lamx.

C. RACEMOSA, Weber van Bosse, Ann. Jard. Bot. Buitenzorg, xv. 357 (1898). *Fucus racemosus*, Forsk. Flor. Aegypt. 191 (1775). *Caulerpa clavifera*, Ag. Spec. Alg. 437 (1823). — ALBEMARLE ISL.: Jan. 11, 1899, *Snodgrass & Heller*. Further distrib. tropical seas.

## ENTEROMORPHA, Link.

E. CLATHRATA, Kütz. Phyc. Germ., 247 (1845). *Conferva clathrata*, Roth. Cat., III, 175 (1806). — ALBEMARLE ISL.: Turtle Pt. in mangrove swamp, *Snodgrass & Heller*. Further distrib. cosmopolitan.

## OEDOGONIUM, Link.

O. sp. — ALBEMARLE ISL.: Iguana Cove with *Najas*, *Snodgrass & Heller*. An entangled mass of a sterile *Oedogonium*.

## RHIZOCLONIUM, Kütz.

R. HOOKERI, Kütz. Tab. Phyc., III, Pl. 67, f. 2 (1853). — ALBEMARLE ISL.: Tagus Cove, Jan. 11, 1899, *Snodgrass & Heller*. Further distrib. Nicobar Ids., Chiloe, etc.

Entangled masses with cells 120–140  $\mu$  in breadth and of the same length or a little longer. Cell-walls rather thick. The rhizoidal branches

seen were very scanty, but that is often the case in other species of the genus. This seems to be the same as the *R. Hookeri* of Grunow, Novara, 37, and his remarks on the Nicobar specimens apply equally to ours. Hohenacker, 477, Chiloe, has cells rather longer and thinner. In spite of the occasional rhizoid processes, it seems to me possible that this may be an old, prostrate form of *Chaetomorpha antennina* (Bory) corresponding to the similar form known in *C. aerea*.

#### ULVA (L.) Wittr.

U. FASCIATA, Delil. Egypt, 153, Pl. 158, f. 5 (1813). — ALBEMARLE ISL.: Tagus Cove, Feb. 1899, *Snodgrass & Heller*. Further distrib. warmer parts of Atlantic and Pacific Oceans, Ceylon.

#### PHAEOPHYCEAE.\*

##### CARPOMITRA, Kütz.

C. CABRERAE, Kütz. Phyc. Gen. 343 (1843). *Fucus cabrera*, Clemente, Cat. 313; Turner, Hist. Fuc. Pl. 140 (1811); Piccone (1), 40. — CHATHAM ISL.: *Marcacci*, acc. to Piccone, l. c. Further distrib. southern Eu., Africa.

##### FUCODIUM, J. Ag.

F. GALAPAGENSE, Picc. & Grun. in Piccone (1), 40, t. 1, f. 1, t. 2, f. 3, & (2), 22. — CHARLES and CHATHAM IDS.: *Marcacci*, acc. to Piccone, ll. cc. Endemic.

##### GLOSSOPHORA, J. Ag.

G. galapagensis, nov. sp.

Frons usque 18 cm. longit., .6 cm. latit. linearis-elongata, saepe di-  
chotoma, axillis apicibusque obtusis, margine distincte spinosa; undique

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\* DIATOMEAE. Many species of this order from the Galapagos Islands are enumerated by Ehrenberg (2), and the following are recorded by Cleve in his paper On some new and little known Diatoms, Kongl. Svenska Vetensk. Akad. Handl. xviii. no. 5, pp. 26, Pl. I-VI, 1881. *Mastogloia panduriformis*, Cl.; *M. submarginata*, Cl. & Grun.; *Navicula Eugeniae*, Cl.; *N. Henedyi*, var. *undulata*, Cl.; *N. Henedyi*, var. *minuta*, Cl.; *N. Platessa*, Cl.; *N. Anderssonii*, Cl.; *N. gallapagensis*, Cl.; *N. jugata*, Cl.; *Surirella degenerans*, Cl.; *S. formosa*, Cl.; *Campylodiscus peramplus*, Cl.; *Plagiogramma spinosum*, Cl.; *Rutilaria recens*, Cl.; *Melosira tuberculosa*, Cl.; *Auliscus insignis*, Cl.; *Biddulphia gallapagensis*, Cl.; *Triceratium Tripos*, Cl.; *T. Anderssonii*, Cl.; *T. laeve*, Cl.; *T. gallapagense*, Cl.; *T. Margaritifera*, Cl.

praecipue in parte inferiore phylliculis vestita quae basem versus deorsum ad instar radicum prolongantur. Sori oosporiferi minuti irregulariter supra frondem sparsi. — ALBEMARLE ISL.: Turtle Pt., March, 1899, Snodgrass & Heller.

In all the specimens there are leaflets on both surfaces of the fronds except near the tips. They arise from the cortical cells, and have no connection with the fructification which is found on the frond itself. Near the base the leaflets grow downward, become somewhat thicker and twisted and bear on their lower surface the proper rhizoids so that the fronds are attached by what is generally called a fibrous base. In spite of the leaflets which would lead one to refer this alga to the genus *Glossophora*, it seems to me to be less closely related to *G. Kunthii*, J. Ag. of Peru, the type of the genus, than to *Dictyota crenulata*, J. Ag. of the Pacific Coast of Mexico. As originally described from Mexico that species has no leaflets and the base is described as stuposc. In 1884 Grunow described a variety from the Canary Islands with leaflets, but its relation to that species is uncertain. The Galapagos species differs so much from *D. crenulata* as originally described, and from the var. *canariensis* that it must be kept distinct. If material hereafter collected should show that the two species are really forms of a single species, a new description will be needed. The following notes on the microscopic structure of the Galapagos alga will be of interest.

In the upper part the frond is about  $100\ \mu$  thick, becoming  $200\ \mu$  thick below. Above, there is a single medullary layer of large cells  $70\ \mu \times 70\ \mu \times 168\ \mu$  and a single layer of colored cortical cells  $14\ \mu \times 14\ \mu$  in section. Below, the cortical cells become rather deeper,  $22\ \mu \times 14\ \mu$  in section, and the medullary cells thicker-walled and comparatively narrower,  $112\ \mu \times 56\ \mu$  in section, and between the medullary and cortical cells is a single layer of flattened colorless cells,  $28\ \mu \times 28\ \mu \times 90\ \mu$ . The tangential walls of the medullary cells are pitted to an extent seldom seen in algae of this order. The oogonia are  $80\ \mu$  or more in diameter and found in small numbers in scattered sori on the frond. The spines are sharper and more solid than in most of the ciliate species, 24–32 mm. long, the tips deeper colored than the base.

PADINA, Adams.

P. DURVILLAEI, Bory, Coquille, 147, t. 21, f. 1 (1829). — ALBEMARLE ISL.: Tagus Cove, and Turtle Pt., Feb. & Mar. 1899, Snodgrass & Heller. CHATHAM ISL.: north, Aug. 1891, Baur as *Zonaria lobata*. Further distrib. W. Ind., west coast of Am.

Typical specimens of this fine species were collected, some more than 12 cm. long. The species has a characteristic rusty-brown color and is coarser than *P. Paronia*. In the median portion the frond has usually ten layers of cells,  $80 \times 40 \mu$  in section, and a single layer of cortical cells,  $14 \times 9 \mu$ . The very large oosporangia vary from  $110-125 \mu \times 70-84 \mu$ .

#### SARGASSUM, Ag.

*S. CYMOSUM*, Ag. Spec. i. 20 (1821); J. Ag. Sp. Sarg. Austr. 109 (1889). — ALBEMARLE ISL.: Tagus Cove and Turtle Pt., March, 1899, *Snodgrass & Heller*. WENMAN ISL.: Dec. 1898, *Snodgrass & Heller*. Further distrib. warmer Atlantic coasts of Asia and Africa.

In the determination of this species I have followed J. Ag. l. c. (1889) and the Albemarle and Wenman Island specimens seem to me to belong to *S. cymosum* as that species is limited by J. Agardh. The species has, however, been variously interpreted by different writers.

*S. GALAPAGENSE*, Grunow in Piccone (1), 48, t. 1. — CHATHAM ISL.: *Marcacci*, acc. to Piccone, l. c. Endemic.

*S. GALAPAGENSE*, var. *SETIFOLIA*, Grunow in Piccone (1), 48, t. 2, f. 1, 2 (1886). — ALBEMARLE ISL.: Tagus Cove and Turtle Pt., Feb. 1899, *Snodgrass & Heller*. CHATHAM ISL.: March, 1884, *Marcacci*, acc. to Piccone, l. c. Endemic.

As is remarked by J. Agardh, l. c., 122, this variety is closely related to *S. pituliferum* (Turn.) Ag., of California and Japan, but not to *S. acinaria* (Turn.) J. Ag., as suggested by Grunow.

? *S. GRAMINIFOLIUM*, J. Ag. Spec. i. 103 (1848). *Fucus graminifolius*, Turn. Hist. Fuc. Pl. 210 (1819). — WENMAN ISL.: *Snodgrass & Heller*. Further distrib. China Sea.

To this species is referred with much doubt a single specimen of a *Sargassum* with the upper fructiferous portion only. The receptacles are racemose, the conceptacles contain antheridia and oogonia, and the leaves are long, narrow, serrate, with but few cryptostomata.

*S. LENDIGERUM*, var. *FOLIOSA*, Grunow in Piccone (1), 49. — CHATHAM ISL.: March, 1884, *Marcacci*, acc. to Piccone, l. c.

*S. LENDIGERUM*, var. *FURCIFOLIA*, Grunow, l. c. 50. — CHATHAM ISL.: March, 1884, *Marcacci*, acc. to Piccone, l. c.

Of the var. *foliosa*, Grunow described two forms, *subdelicatula* and *rigidiuscula* and of var. *furcifolia* a forma *denticulata*. J. Agardh, l. c.



122, remarks that the var. *furcifolia* is hardly different from *S. galapagense*. *S. lendigerum* is a species known mainly from the figure in Turner, Hist. Fuc. Pl. 48 (1808), with which agree the specimens from Bermuda referred to *S. lendigerum* by J. Agardh, l. c. 110, and the species appears to be limited to the Atlantic. None of the specimens of Snodgrass & Heller can be referred to *S. lendigerum*, but it is probable that some of the forms of Grunow's var. *foliosa* may be the same as specimens which I have included under *S. cymosum*.

SPATOGLOSSUM (Kuetz.), J. Ag. Emend.

*S. SCHROEDERI*, Kuetz. Tab. Phyc. ix. 21, t. 51, f. 1 (1859); Piccone (2), 17. *Zonaria*, Ag. Syst. 265 (1824). — CHARLES ISL.: *Marcacci*, acc. to Piccone, l. c. Further distrib. Brazil, W. Ind.

ZONARIA, J. G. Agardh.

*Z. LOBATA*, Ag. Syst. 265 (1824); Piccone (1), 89, & (2), 40. — CHARLES and CHATHAM IDS.: March, 1884, *Marcacci*. Further distrib. trop. Atlantic coast of America, Teneriffe, Cape of Good Hope.

RHODOPHYCEAE.

AMPHIROA, Lamx.

*A. DILATATA*, Lamx. Hist. Polyp. Flex. 299 (1816); Piccone (1), 66, & (2), 46. — ALBEMARLE ISL.: Elizabeth Bay, *Snodgrass & Heller*. CHARLES ISL.: *Snodgrass & Heller*. Further distrib. Australia.

*A. ORBIGNIANA*, Decaisne, Ann. Sci. Nat. Bot. ser. 2, xviii. 124 (1842). — ALBEMARLE ISL.: Turtle Pt., March, 1899, *Snodgrass & Heller*. Further distrib. Pacific Coast of Am.

The specimens are covered with parasites and not in typical condition, but they appear to belong to this species.

*A. PERUANA*, Aresch. Phyc. Extraeur. 41 (1854). — WENMAN ISL.: Dec. 1898, *Snodgrass & Heller*. Further distrib. Florida, Peru.

CALLOPHYLLIS, Kütz.

*C. sp.* — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*.

Two small specimens with cystocarps which are of large size, some of them with marked papillae around the carpostome. The species is apparently near *C. furcata*, Farl. but the specimens are incomplete and cannot be referred with certainty to that species.

## CHONDRUS, Stack.

*C. CANALICULATUS*, Grev., Alg. Brit., lv. (1830). *Sphaerococcus canaliculatus* C. Ag. Spec. I, 260 (1822). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*. Further distr. West coast of S. Am.

A single specimen which can be referred to this species. There are a few specimens which may perhaps belong to this species but they certainly are not normal. They have the structure of the frond and the sporidia of *Chondrus*, but, in the absence of cystocarps, there is a possibility that they may belong to the genus *Iridaea*. Their habit, however, is that of *Chondrus*, but the fronds are occasionally perforate, which may however be accidental rather than normal.

## CORALLINA, Lamx.

? *C. BERTERII*, Mont. in Harvey, Ner. Austr. ii. 103 (1858), & Fl. Chili. viii. 318. — ALBEMARLE ISL.: Elizabeth Bay, *Snodgrass & Heller*. Further distrib. Chili.

Much covered with parasites and not in favorable condition to be determined.

## DASYA, C. Ag.

*D. Stanfordiana*, nov. sp.

Frons cylindrica, ad 15 cm. longit., basem versus 1.25 mm. latit., irregulariter composito-pinnata, usque apicem dense corticata, ramis superne elongatis, ramellis subaequalibus, brevibus, circa 32 mm. longit., vestitis. Ramelli monosiphonii, spiraliter inserti, unilateraliter cymosi, cellulis  $56\mu \times 28\mu$ , cellula terminali conica, inter ramificationes bicellulis. Stichidia primum ovato-lanceolata demum cylindrico-apiculata,  $168\mu \times 28\mu$  bene evoluta, sporidiis 20-seriebus et ultra ordinatis, cellulis pericentralibus 5-8. Color roseo-purpureus, substantia gelatinosa. Chartae arcte adhaeret. — WENMAN ISL.: Dec. 21, 1898, *Snodgrass & Heller*. ALBEMARLE ISL.: Turtle Pt., March, 1899, *Snodgrass & Heller*.

A species resembling *D. pacifica*, Harv. in its long stichidia but differing in its long slender habit quite unlike that of *D. arbuscula* J. Ag. to which *D. pacifica* bears a strong resemblance and in its branches densely corticated to the apex. In the authentic specimen of *D. pacifica* which I have examined the pericentral cells were easily seen at some distance from the apex, whereas in *D. Stanfordiana* they can be seen only at the extreme tip on account of the thick cortex. The monosiphonous ramelli and the exposed sporangia agree with those of *Dasya*



as defined by Falkenberg, but there is a free cell between those from which the divisions of the ramelli arise. With this exception, the plan of ramification follows the type shown in Falkenberg, fig. 10, A. The divisions of the ramelli are not divergent but penicillate with a tendency to be slightly convergent. The older stichidia are very long and the consecutive series of sporidia are often as many as 20 and sometimes more, showing 3-4 sporangia on side view. The branches are radial and not dorsiventral, although in drying they have the appearance of being flattened in the upper part. In section of the larger branches it was not possible to recognize any definite axial or pericentral cells in the material examined, but they had probably collapsed in the preparation.

#### DILSEA, Stack.

D. sp. — ALBEMARLE ISL.: Iguana Cove, Dec. 30, 1898, *Snodgrass & Heller*.

A single imperfect specimen with sporangia; the material insufficient for specific determination.

#### GALAXAURA, Lamx.

G. MARGINATA, Lamx. Hist. Polyp. Flex. 264 (1816). *Corallina marginata*, Ell. & Sol. 122, t. 22, f. 6 (1786). *Brachycladia*, Sonder et Auct. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*. Further distrib. tropical seas.

#### GELIDIUM, Lamx.

G. CRINALE, J. Ag. Epicr. 546 (1876). *Fucus crinalis*, Turn. Hist. Fuc. Pl. 198 (1819). *Gelidium corneum*, var. *crinale*, Auct.; Piccone (2) 39. — CHARLES ISL.: *Maracci*, acc. to Piccone, l. c. Further distrib. general.

G. SERRULATUM, J. Ag. Oefv. Kongl. Vet. Akad. Förh. iv. 11 (1847). — WENMAN ISL.: Dec. 1898, *Snodgrass & Heller*. Further distrib. Venezuela.

Several specimens of a *Gelidium* were collected at Wenman Isl. with well-developed bilateral conceptacles characteristic of the genus. One would have expected from this locality rather *G. filicinum*, Bory, Coquille, 162 (1829), than *G. serrulatum* since the former species was first described from Chili, whereas the latter is an Atlantic species. I have been able to compare the Wenman Isl. specimens with an authentic specimen of *G. filicinum* from herb. Bory through the kindness of

Dr. E. Bornet and with an authentic specimen of *G. serrulatum* from herb. Agardh. It seems to me that there can be no doubt that they agree perfectly with *G. serrulatum* and differ from *G. filicinum* although the two species are certainly closely related.

G. FILICINUM, Bory, Coquille, 162 (1829). — ALBEMARLE ISL.: Iguana Cove, Dec. 30, 1898, *Snodgrass & Heller*. Further distrib. west coast of South America.

But a single specimen was found which may be referred to this species.

#### GIGARTINA, Stackh.

G. LESSONII, J. Ag. Spec. Alg. ii. 268 (1851). *Sphaerococcus Lessonii*, Bory, Coquille, 171 (1829), excl. syn. — ALBEMARLE ISL.: Elizabeth Bay and Iguana Cove, Feb. 1899, *Snodgrass & Heller*. Further distrib. Peru, Chili.

Most of the specimens were small and sterile, but one had conceptacles which in this species are borne at the base of small branchlets rather than in well-marked papillae as in most species of the genus.

#### GRACILARIA, Grev.

? G. RUGULOSA, Mont. Pole Sud, 155, Pl. 13, fig. 1 (1845) sub *Hypnea*. — ALBEMARLE ISL.: Iguana Cove. *Snodgrass & Heller*. Further distrib. Australia.

Two specimens with cruciate sporidia which agree well with the description and figure of the habit of this species. Montagne's figure shows sporidia which certainly are not zonate as in *Hypnea*, but may be tripartite, although the figure is not quite clear on that point. The Galapagos alga has cruciate sporidia and hence, in spite of its habit, can be referred only with doubt to Montagne's species.

#### GYMNOGONGRUS, Mart.

G. GRIFFITHSIAE, var. GALAPAGENSIS, Picc. & Grun. in Piccone (1), 60, & (2), 31. — CHARLES and CHATHAM IDS.: *Marcacci*, acc. to Piccone, ll. cc. Endemic.

G. MELANOTHRIX, Grunow in Piccone (1), 60, & (2), 31. *Gigartina melanothrix*, Bory, Coquille, 152, t. 19, f. 3 (1829). — CHARLES and CHATHAM IDS.: *Marcacci*, acc. to Piccone, ll. cc. Further distrib. Chili.

G. VERMICULARIS, J. Ag. Spec. Alg. ii. 323 (1851.) *Fucus vermicularis*, Turn. Hist. Fuc. Pl. 221 (1819); Piccone (1), 61. —

CHATHAM ISL.: March, 1884, *Marcacci*, acc. to Piccone, l. c. Further distrib. western So. Am.

HERPOPHYLLON, gen. prov.

Frons membranacea, prostrata, subcircularis vel vague expansa, centro radicibus adfixa. Structura interne cellulis oblongis vel radiatim elongatis, parietibus distincte colloideis cellulis superficiem versus rotundatis in stratum unicum corticale transformatis constituta. Sporangia cruciatim divisa, in soris verrucaeformibus supra frondem sparsa. Cystocarpia ignota.

*H. coalescens*, spec. prov.

Fronde circa 40 mm. diametro, aggregatae, a marginibus coalescentes, thallum indefinite expansum formantes. Sporangia in soris verrucaeformibus ad superficiem superiorem frondis inter paraphyses allata, anguste ovals,  $56\ \mu \times 15\text{--}20\ \mu$ . ALBEMARLE ISL.: Tagus Cove, March, 1899, *Snodgrass & Heller*.

The provisional name given above is adopted to designate a curious alga the cystocarpic fruit of which is unknown and which in other respects does not agree with any genus known to me. When removed from the fluid in which it was preserved it appeared like an irregular, rather cartilaginous pellicle adherent to the substratum by groups of coarse rhizoids. On a closer examination the surface was seen to be ridged, or veined, and apparently the larger specimens are composed of smaller individual fronds which have united, each tuft of rhizoids being in the centre of a frond. The smaller specimens were like the larger, but none seen was so small as to be composed of a single frond. The microscopic structure of the ridges show that they are the lines of union of two different fronds, or, if the whole is to be regarded as a single plant, of its different lobes. The internal structure consists of a compact tissue of large cells about  $56\ \mu$  in transverse section but more or less elongated in radial sections, some being  $140\ \mu$  long. They cannot, however, be called filaments. Near the upper and lower surfaces and near the margin the cells become more nearly spherical. The cell-walls are markedly colloidal and near the margin seem to be imbedded in a solid colloidal matrix. The cortical cells are small and arranged in a single layer, especially on the lower surface, those on the upper surface more frequently dividing anticlinically, especially where the sporidia are forming. The latter are in spots on the upper surface, which are sometimes not much raised but at other times form well-marked warts. The sporangia are borne between paraphyses about  $60\ \mu$  long and  $3\ \mu$  broad, formed by the out-

growth of cortical cells. It is to be regretted that more is not known as to the mode of growth of the frond. As it is, this alga, although at first sight it suggested *Peyssonnelia rugosa* Harv. in its habit, cannot be referred to that genus, for the frond in section is seen to be symmetrical except that the cortical cells on the under side are more uniformly in a single layer than above, but quite different from the well-defined base of *Peyssonnelia*. Nor can it be considered a prostrate form of *Kallymenia* or *Constantinea*, to which it appears to be more nearly related. It might be suggested that the specimens were abnormal developments of some species with erect fronds, but the abundance of sporidia appear to indicate that the growth was normal.

#### HYPNEA, Lamx.

H. PANNOSA, J. Ag. Oefv. Kongl. Vet. Akad. Förh. iv. 14 (1847). — ALBEMARLE ISL.: Tagus Cove, Feb. 1889, *Snodgrass & Heller*. Further distrib. tropical seas.

#### LAURENCIA, Lamx.

L. OBTUSA (Huds.) Lamx., var. GRACILIS, Harv. Ceyl. Alg. 26; Piccone (1), 80. — CHATHAM ISL.: March, 1884, *Marcacci*, acc. to Piccone, l.c. Further distrib. general.

#### LITHOPHYLLUM, Phil.

\* L. FARLOWII, Heydrich in Engler, Bot. Jahrb. xxviii. 532, t. 1, f. 6 (1901). — CHARLES ISL.: *Hassler Exped.* Endemic.

#### LITHOTHAMNIUM, Phil.

L. CRASSUM, Phil. Weigm. Arch. 1837, 2, p. 388; Piccone (2), 45. — CHARLES ISL.: *Marcacci*, acc. to Piccone, l.c.

No specimens of this species have been seen, and I am unable to say whether the alga collected by *Marcacci* on the Pisani Exp. is the same as the *L. crassum*, originally described from the Mediterranean, as that species is now understood.

#### MELOBESIA, Lamx.

M. CORTICIFORMIS, Kütz. Spec. Alg. 696 (1849). — WENMAN ISL.; on *Gelidium serrulatum*, Dec. 1888, *Snodgrass & Heller*. Further distrib. general.

M. PUSTULATA, Lamx. Hist. Polyp. Flex. 315, t. 12, f. 2 (1816); Piccone (1), 65. — CHATHAM ISL.: (on *Zonaria lobata*) *Marcacci*, acc. to Piccone, l.c. Further distrib. general.

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\* Name changed to *L. claudescens*, Heydrich, Ber. deutsch. bot. Ges. xix, 430, as it is antedated by *L. Farlowii*, Foster.

## OCHTODES, J. Ag.

O. FILIFORMIS J. Ag. Bid. Flor. Syst., 5 (1871), Flor. Morph. Pl. 31, p. 1-8 (1879); *Sphaerococcus filiformis* J. Ag. Spec. Alg. ii, 664 (1851). — WENMAN ISL.: Dec. 1898, *Snodgrass & Heller*. Further distrib. West Indies.

The occurrence of this characteristic but not common West Indian species at the Galapagos is interesting. The few specimens collected have an abundance of cystocarps whose structure together with the peculiar axial structure of the fronds leaves no doubt as to the genus, nor am I able, even in their habit, to recognize any specific distinction between West Indian and Pacific specimens.

## PEYSSONNELIA, Decaisne.

P. RUBRA J. Ag. Spec. Alg. ii. 502 (1851). *Zonaria rubra* Grev. Trans. Linn. Soc. xv. 340, Pl. III. f. 3 (1827). — ALBEMARLE ISL.: Elizabeth Bay, *Snodgrass & Heller*. Further distrib. Mediterranean, Pacific Islands.

Specimens with sporangia, the color altered by the preserving fluid.

## PLOCAMIUM, Lyngb.

P. COCCINEUM Lyngb. Tent. Hydr. 39, Pl. 9, B. (1819). *Fucus coccineus* Huds. Fl. Angl. ed. 2, 586 (1778). — WENMAN ISL., Dec. 1898, *Snodgrass & Heller*. Distribution, general.

## RHODYMENIA (Grev.) J. Ag. Emend.

R. FLABELLIFOLIA, Mont. Bonite, 105 (1844). *Sphaerococcus flabellifolius*, Bory, Coquille, 174, t. 17 (1829). — ALBEMARLE ISL.: Elizabeth Bay and Iguana Cove, Dec. 30, 1898, *Snodgrass & Heller*. Further distrib. Peru, Chili.

All the specimens from Elizabeth Bay and some of those from Iguana Cove have the typical habit of this species. Some of the specimens from the latter locality are more branched than the type but appear to belong to the same species.

## HEPATICAÆ.

By A. W. EVANS.

BRYOPTERIS, Lindenb.

B. FILICINA (Sw.) Nees, Syn. Hep. 284 (1845). *Jungermannia filicina*, Wilson in Hook. f. (3), 165. — JAMES ISL.: Darwin. Widely distributed in tropical America.

B. GALAPAGANA, Gottsche, Ann. Sci. Nat. ser. 4, viii. 341 (1857). Listed by Wilson in Hook. f. (3), 165, as *Jungermannia filicina*, var. *tenuis*. — CHARLES and JAMES IDS.: Darwin. Also collected by Andersson. The species is endemic but is very close to the following.

B. TENUICAULIS, Tayl. Syn. Hep. 285 (1845). — ABINGDON ISL.: Snodgrass & Heller. CHATHAM ISL.: Baur. Known also from the Andes.

FRULLANIA, Raddi.

F. ACULEATA, Tayl. Lond. Jour. Bot. v. 407 (1846). — GALAPAGOS IDS.: Darwin. Also found in the Andes. *Jungermannia pungens*, Wils. in Hook. f. (3), 165, collected on CHARLES ISL. by Darwin, is apparently a synonym of this species.

F. ATRATA (Sw.) Nees, Syn. Hep. 463 (1845). — CHARLES ISL.: Darwin; 8 Apr. 1888, Lee. DUNCAN ISL.: Baur. Widely distributed in tropical America.

F. GALAPAGONA, Ångstr. Öfversigt Kongl. Vetensk.-Akad. Förhandl. xxx. no. 5, 116 (1873). — GALAPAGOS IDS.: Andersson. Endemic.

F. TAMARISCI (L.) Dum. Recueil d'Obs. 13 (1835). — This widely distributed species of Europe and North America is quoted by Wilson from CHARLES ISL.: Darwin. The species would hardly be expected from the Galapagos Islands.

F. VAGINATA (Sw.) Dum. l. c. — CHARLES and JAMES IDS.: Darwin. A Javan species. Its occurrence on the Galapagos Ids. is considered doubtful by Schiffner (cf. Conspect. Hepat. Arch. Ind. 348).

LOPHOLEJEUNEA (Spruce) Schiffn.

L. ANDERSSONII, Steph. Hedwigia, xxxv. 108 (1896). — GALAPAGOS IDS.: Andersson. Endemic.



## MARCHESINIA, S. F. Gray.

M. BRACHIATA (Sw.) Schiffn. in Engl. & Prantl. Nat. Pflanzenf. i. Abt. 3, 128 (1893). — DUNCAN ISL.: Baur. Widely distributed in tropical America. *Phragmicoma galapagana*, Ångstr. l. c. 114, and *P. nigrescens*, Ångstr. l. c. 115, are very close to this extremely variable species. Both were collected by Andersson.

## NOTOTHYLAS, Sull.

N. ORBICULARIS (Schwein.) Sull. Mem. Am. Acad. new ser. iii. 64, t. 4 (1846). — ALBEMARLE ISL.: Tagus Cove, *Snodgrass & Heller*. Widely distributed in eastern N. Am.; also European.

## OMPHALANTHUS, Lindenb. &amp; Nees.

O. FILIFORMIS (Sw.) Nees, Syn. Hep. 304 (1845). — CHARLES and JAMES IDS.: Darwin. Widely distributed in tropical America, especially in mountainous regions.

## PELTOLEJEUNEA (Spruce) Schiffn.

P. GALAPAGONA, Steph. Hedwigia, xxxv. 123 (1896). — CHARLES ISL.: Andersson. Endemic.

## PLAGIOCHASMA, Lehm. &amp; Lindenb.

P. ? — ALBEMARLE ISL.: Iguana Cove, Tagus Cove, and mountain east of Tagus Cove, *Snodgrass & Heller*. CHARLES ISL.: Baur, no. 380 (hb. Harvard Univ.). NARBOROUGH ISL.: south side, 615 m. alt., *Snodgrass & Heller*. The specimens are all sterile and indeterminate but seem referable to a single species.

## PLAGIOCHILA, Dum.

P. ANDERSSONII, Ångstr. l. c. 114; Rose (1), 138. — GALAPAGOS IDS.: Andersson. CHATHAM ISL.: A. Agassiz. Further distrib. Cocos Island of the Pacific.

P. SPINIFERA, Ångstr. l. c. — GALAPAGOS IDS.: Andersson. Endemic.

## RADULA, Dum.

R. RETROFLEXA, Tayl. Lond. Jour. Bot. v. 378 (1846). — GALAPAGOS IDS.: Andersson. Also known from the "Pacific Islands," *Nightingale*.

## RICCIA, Mich.

R. ? Sterile and indeterminate. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*.

## MUSCI.

By W. G. FARLOW.

## CALYMPERES, Sw.

C. SPRUCEI, Bescherelle, Ann. Sci. Nat. Bot. ser. 8, i. 304 (1895). — BINDLOE ISL.: *Snodgrass & Heller*. Several specimens of this species were collected. There are no capsules but an abundance of septate gemmae borne on the long club-shaped prolongation of the ribs. As there appeared to be a slight difference between the cell-structure of these specimens and Spruce's no. 20, on which Bescherelle founded his *C. Sprucei*, material of the Galapagos plant was submitted to M. Bescherelle, the learned author of the *Essai sur le genre Calymperes*, who has been so kind as to verify the identification.

## CAMPYLOPUS, Brid.

C. ANDERSSONII, Jaeg. Adumb. i. 140 (1870). *C. sp.* Anderss. (1), 125. *Dicranum Anderssonii*, C. Muell. Bot. Zeit. xiv. 169 (1856); Anderss. (2), 37. — CHARLES ISL.: *Andersson*. Endemic. To judge from the description this must be quite different from the following species.

C. LAMELLATUS, Mont. Ann. Sci. Nat. Bot. ser. 2, ix. 52 (1838) *Dicranum lamellatum*, C. Muell. Syn. Musc. i. 411 (1849). — ALBEMARLE ISL.: mountain east of Tagus Cove, alt. 770 m., 1 Feb., and June, 1899, *Snodgrass & Heller*. Further distrib. Bolivia. To this species may be referred a moss collected in small quantity with a marked polytrichoid habit suggesting *C. polytrichoides*, De Not.; Renauld & Cardot, Musci. Eur. no. 114, and *C. leucotrichus*, Sull. & Lesq. Musc. Am. Bor. no. 73 (1856). The stems are from 1½ to 4 cm. high, nearly simple, but in a few cases with lateral innovations just below the tips, which are gemmiferous but without traces of antheridia or archegonia. The erect infolded leaves terminate in long hyaline papilliferous hairs. The ribs which occupy the greater part of the leaves have a large number, about 30, of dorsal laminae composed of three or four cells seen in section, the terminal cell being obtuse. In well-developed leaves there is in the costal region a single internal layer of squarish colorless cells, 16–18  $\mu$  by 14  $\mu$  in section, but in older leaves there is developed inside these colorless cells a layer of very narrow small cells. The union by Mitten, Musci. Austro-Americani, of *C. lamellatus*, *C. polytrichoides*, *C. leucotrichus* and a number of other species into a single



species (*C. introflexus* (Hedw.) Mitt.) is incorrect so far as *C. introflexus*, at least, is concerned, as was shown by Duby and C. Mueller, but probably Mitten was justified in uniting some of the species referred to. I am unable to ascertain whether *C. lamellatus* or *C. polytrichoides* was first published since both species were described in 1838. The present species may be referred to *C. lamellatus*, Mont., to which it is at least very closely related, but the scanty and sterile material prevents an accurate determination. The specimens in their leaf structure agree well with the *C. lamellatus* of the Wilkes Expedition in herb. Sullivant.

DALTONIA, Hook. & Tayl.

D. ROBUSTA, Ångstr. Oefv. 1873, no. 5, p. 117. — GALAPAGOS IDS.: *Andersson*. Endemic.

MACROMITRIUM, Brid.

M. SCABRISETUM, Wils. in Hook. f. (3), 165; *Anderss.* (1), 125, & (2), 37. Reduced by Mitten, Jour. Linn. Soc. xii. 210, to *M. longifolium*, Brid. Bryol. Univ. i. 309, 738 (1826), which is *Orthotrichum longifolium*, Hook. Musc. Exot. t. 44 (1818). — ABINGDON ISL.: alt. 250 m., 25 June, 1899, *Snodgrass & Heller*. CHARLES ISL.: *Darwin*. The material secured by Messrs. Snodgrass & Heller consists of a single small specimen with lower leaf cells papillose and rather transparent. The specimen was sterile and the absence of the seta made accurate determination impossible, and furthermore the leaves themselves were not in very good condition, being old and more or less torn.

PAPILLARIA, C. Muell.

P. NIGRESCENS, Jaeg. Adumb. vii. 265 (1876). *Neckera nigrescens*, Schw. Suppl. 3, i. t. 244 (1828); *Anderss.* (1), 125, & (2), 37. — CHARLES ISL.: *Andersson*. ? JAMES ISL.: *Darwin* ("Neckera vel Pilotrichum sp.?" Hook. f. (3), 165). Neither seen by the writer. Further distrib. general in North and South America.

PILOTRICHELLA, C. Muell.

P. ANDERSSONII, Jaeg. Adumb. vii. 262 (1876). *Neckera Anderssonii*, C. Muell. Bot. Zeit. xiv. 170 (1856); *Anderss.* (2), 37. — CHARLES ISL.: *Andersson*. Endemic. Not seen by the writer.

P. NIGRICANS, Besch. Prodr. Bry. Mex. 79. *Hypnum nigrescens*, Hook. in Kunth, Syn. Pl. Equin. i. 64 (1822). — GALAPAGOS IDS.:

*Andersson*, vid. Ångström in Oefv. k. Vet. Akad. Förh. xxx. 118 (1873).

#### SCHLOTHEIMIA, Brid.

*S. JAMESONI*, Brid. Bryol. Univ. i. 742 (1826). *Orthotrichum Jamesoni*, Arn. Trans. Wern. Soc. v. 201 (1824). — ALBEMARLE ISL.: Iguana Cove, 30 Dec. 1898, *Snodgrass & Heller*. Further distrib. Brazil. The specimens referred to this species were sterile. The leaf structure agrees so well with that of *S. Jamesoni* in herb. Taylor that the name may be retained here. The relations of *S. Jamesoni* to *S. nitida*, Schwaeg., are not well defined and in herb. Sullivant the *S. Jamesoni* of the Wilkes Expedition was later considered to be *S. nitida*.

#### FILICES.

##### ACROSTICHUM, L.

*A. AUREO-NITENS*, Hook. Ic. Pl. x. t. 933 (1854), & Sp. Fil. v. 270 (1864); Anderss. (1), 131, & (2), 42; Hook. & Bak. Syn. Fil. 421 (1868). *Hemionitis pinnata*, Hook. f. (3), 167, excellently described, yet neglected by most subsequent authors; Andersson (1), 129, & (2), 40. *Neurocallis aureo-nitens*, Moore, Ind. Fil. 5 (1857). *Chrysodium aureo-nitens*, Christ, Farnkr. 47 (1897). *Elaphoglossum aureo-nitens*, Diels in Engl. & Prantl, Nat. Pflanzenf. i. Abt. 4, 334, f. 174 H. (1899). — GALAPAGOS IDS.: *Cuming*, no. 109. ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 17 (hb. Gr.); on mountain east of Tagus Cove, alt. 920 m., *Snodgrass & Heller*, no. 229 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *Lee* (hb. U. S. Nat. Mus.); *Baur*, no. 356 (hb. Gr.). CHATHAM ISL.: *Capt. Wood*. NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, no. 319 (hb. Gr.). Further distrib. Ecuador, acc. to Diels. l. c. A fern of remarkable and characteristic habit, the sterile fronds spatulate and entire, the fertile pinnate.

*A. AUREUM*, L. Sp. 1069 (1753); Schk. Fil. t. 1; Hook. Sp. Fil. v. 266. *Chrysodium aureum*, Mett. Fil. Lips. 21 (1856). — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. Further distrib. general in trop. and sub trop. reg.

*A. MUSCOSUM*, Sw. Fl. Ind. Occ. 1591 (1806), & Syn. Fil. 10; Hook. Sp. Fil. v. 231. *A. Langsdorffii*, Hook. & Grev. Ic. t. 164 (1831). *Elaphoglossum muscosum*, Moore, Ind. Fil. 12, 362 (1862). *Olfersia muscosa*, Presl, Tent. Pterid. 233 (1836). *O. Langsdorffii*, Presl, l. c. 234; Hook. f. (3), 167; Anderss. (1), 128, & (2), 39. —

JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Not secured by subsequent collectors in the Galapagos Ids. Further distrib. Mex. (acc. to Hook. & Bak.), W. Ind. to Peru and Brazil.

A. VISCOSUM, Sw. Syn. Fil. 10, 193 (1806); Hook. & Grev. Ic. t. 64; Hook. Sp. Fil. v. 220. *Elaphoglossum viscosum*, Schott acc. to Moore, l. c. 369. *Olfersia viscosa*, Presl, l. c. *O. viscida*, Presl acc. to Hook. f. (3), 167; Anderss. (1), 129, & (2), 39. — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Not since collected on the Galapagos Ids. Further distrib. Mex., W. Ind., S. Am., E. Ind., etc.

#### ADIANTUM, L.

A. AETHIOPICUM, L. Sp. ed. 2, 1560 (1763); Hook. Sp. Fil. ii. 37, t. 77 A; Moore, Ind. Fil. 19. — GALAPAGOS IDS.: acc. to Moore, l. c. Further distrib. general in trop.

A. CONCINNUM, Humb. & Bonpl. in Willd. Sp. v. 451 (1810); HBK. Nov. Gen. & Sp. i. 20, t. 668 (1815); Hook. Sp. Fil. ii. 42. *A. cuneatum*, Hook. f. (3), 168; Anderss. (1), 129, & (2), 40; not Langsd. & Fisch. — ABINGDON ISL.: alt. 520 m., *Snodgrass & Heller*, no. 818 (hb. Gr.). ALBEMARLE ISL.: north mountain, Elizabeth Cove, *Snodgrass & Heller*, no. 282 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 15 (hb. Gr.); Tagus Cove, abundant from the sea-level to 950 m. alt., *Snodgrass & Heller*, no. 182 (hb. Gr.). JAMES ISL.: *Scouler*; *Darwin*; common on lava rocks, *Snodgrass & Heller*, no. 361 (hb. Gr.). NARBOROUGH ISL.: southern part, abundant in shade, alt. 310 to 620 m., *Snodgrass & Heller*, no. 320 (hb. Gr.). The last number has broader, flatter sori and its identity with the others is somewhat doubtful. Further distrib. Mex., W. Ind. to Peru and Brazil.

A. HENSLOVIANUM, Hook. f. (3), 169; Anderss. (1), 129, & (2), 40; Hook. & Bak. Syn. Fil. 118; Rob. & Greenm. (1), 149. *A. sessilifolium*, Hook. Sp. Fil. ii. 44, t. 85. — CHARLES ISL.: *Darwin*. CHATHAM ISL.: southwest end, middle region, *Baur*, no. 361 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. Andean S. Am.

A. INCISUM, Presl, Rel. Haenk. i. 61, t. 10, f. 3 (1830), & Tent. Pterid. 157; Hook. Syn. Fil. ii. 28; Moore, Ind. Fil. 28. — GALAPAGOS IDS.: acc. to Moore, l. c., and Christ, Farnkr. 138. Further distrib. Pacific slope of northern S. Am. and S. Mex.

A. KAULFUSSII, Kunze, Linnaea, xxi. 221 (1848); Moore, Ind. Fil. 29. — "CHATHAM ISL." [presumably of the Galapagos group] acc. to Moore, l. c. Further distrib. northern S. Am., Mex., W. Ind.

*A. PARVULUM*, Hook. f. (3), 168; Anderss. (1), 129, & (2), 40; Hook. Sp. Fil. ii. 44. — CHARLES ISL.: *Darwin*. A species not secured by any subsequent collector, and omitted by Hook. & Bak. from their Syn. Fil. Endemic so far as known.

*A. PATENS*, Willd. Sp. v. 439 (1810); Hook. Sp. Fil. ii. 29, t. 87 A; Hook. & Bak. Syn. Fil. 126. — GALAPAGOS IDS.: acc. to Moore, l. c., and Hook. & Bak. l. c. Further distrib. Mex. to Ecuador.

*A. PRIONOPHYLLUM*, HBK. Nov. Gen. & Sp. i. 20 (1815); Hook. Sp. Fil. ii. 22; Moore, Ind. Fil. 34. — CHATHAM ISL.: acc. to Moore. Further distrib. Mex., W. Ind., northern S. Am.

#### ASPIDIUM, Sw.

*A. CORIACEUM*, Sw. Syn. Fil. 57 (1806); Willd. Sp. Pl. v. 268; Hook. Sp. Fil. iv. 32; Schk. Fil. 50, t. 50. *A. capense*, Willd. l. c. 267 (1810); Hook. & Bak. Syn. Fil. 254. *Polypodium coriaceum*, Sw. Prodr. 133 (1788). *Polystichum coriaceum*, Schott, Gen. Fil. t. 9 (1834); Presl, Tent. Pterid. 84; Hook. f. (3), 171; Anderss. (1), 131, & (2), 41. — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Apparently not since collected on the islands. Further distrib. W. Ind., S. Am., Trop. of Old World.

*A. SEMICORDATUM*, Sw. Syn. Fil. 45 (1806); Hook. Sp. Fil. iv. 16, which see for synonym. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. Further distrib. W. Ind. to Peru and Brazil. Varieties also in the Old World.

#### ASPLENIUM, L.

*A. ANISOPHYLLUM*, var. *LATIFOLIUM*, Hook. Sp. Fil. iii. 111 (1860). *A. nigrescens*, Hook. f. (1), 170; Anderss. (1), 131, & (2), 41; not Bl. *A. nubilum*, Moore, Ind. Fil. 150 (1859). — GALAPAGOS IDS.: *Capt. Wood*. JAMES ISL.: *Darwin*. Further distrib. trop. Am. and Afr.

*A. AURITUM*, Sw. Fl. Ind. Occ. 1616 (1806); Hook. Sp. Fil. iii. 178; Rob. & Greenm. (1), 149. *A. marinum*, var. *auriculatum*, Hook. f. (3), 170; Anderss. (1), 131, & (2), 41. — ABINGDON ISL.: *Snodgrass & Heller*, no. 835 (hb. Gr.). CHARLES ISL.: *Darwin*; in the upper shaded region, *Andersson*; *A. Agassiz*. CHATHAM ISL.: *Capt. Wood*, acc. to Hook. l. c.; on the southwest end, middle region, *Baur*, no. 354 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. Mex., W. Ind., S. Am. *Capt. Wood's* plant stated by Hook. to be partially bipinnate, is probably the one which Moore (Ind. Fil. 170) doubtfully refers to the Galapagos Ids. under the name of *A. sulcatum*, Lam.

Var. *MACILENTUM*, Moore, Ind. Fil. 115 (1859); Hook. Sp. Fil. iii. 179. — GALAPAGOS IDS.: acc. to Moore, l. c. Further distrib. Mex., W. Ind., trop. S. Am.

*A. CICUTARIUM*, Sw. Prodr. 130 (excl. syn.); Hook. Sp. Fil. iii. 198; Lowe, Nat. Hist. Ferns, v. t. 20; Rob. & Greenm. (1), 149. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. CHATHAM ISL.: acc. to Moore, Ind. Fil. 119; southwest end, middle region, *Baur*, no. 359 (hb. Gr.). Further distrib. Mex., W. Ind., S. Am., Afr.

*A. FORMOSUM*, Willd. Sp. v. 329 (1810); Hook. Sp. Fil. iii. 143, & Fil. Exot. t. 16. *A. subulatum*, Hook. & Arn. Bot. Beech. 312, t. 71. *A. subulatum*, Hook. f. (3), 169; Anderss. (1), 130, & (2), 41. *A. farinosum*, Rob. & Greenm. (1), 149, by typographical error. — ABINGDON ISL.: alt. 540 m., *Snodgrass & Heller*, no. 819 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 27 (hb. Gr.); on mountain east of Tagus Cove, *Snodgrass & Heller*, no. 240 (hb. Gr.). CHARLES ISL.: *Darwin*; *Lee* (hb. U. S. Nat. Mus.); *Baur*, no. 366 (hb. Gr.). CHATHAM ISL.: *Capt. Wood*; *Cuming*, no. 108, acc. to Hook. Sp. Fil. iii. 143. Further distrib. general in trop. of both hemispheres.

*A. FURCATUM*, Thunb. Prodr. Fl. Cap. 172 (1800); Hook. Sp. Fil. iii. 165; Hook. f. (3), 169; Anderss. (1), 130, & (2), 41. *A. praemorsum*, Sw. Fl. Ind. Occ. iii. 1620 (1806); Moore, Ind. Fil. 155. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. ALBEMARLE ISL.: on mountain east of Tagus Cove, *Snodgrass & Heller*, no. 239 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. general in trop. of both hemispheres.

*A. LAETUM*, Sw. Syn. Fil. 79, 271 (1806); Hook. Sp. Fil. iii. 133. *A. abscissum*, Willd. Sp. v. 321 (1810), in part. — CHATHAM ISL.: *Capt. Wood*, acc. to Hook. l. c. Further distrib. general in trop. Am.

*A. LUNULATUM*, Sw. Syn. Fil. 80 (1806); Hook. & Bak. Syn. Fil. 202. *A. erectum*, Bory in Willd. Sp. v. 328 (1810); Hook. Sp. Fil. iii. 126. — CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.). Widely distrib. in trop. reg.

*A. RHIZOPHYLLUM*, Kunze, Linnaea, ix. 71; Hook. Sp. Fil. iii. 200; not L. *A. Macraei*, Hook. & Grev. Ic. 217 (acc. to Hook. l. c.), and hence (if rightly identified) Hook. f. (3), 169, and Anderss. (1), 131, & (2), 41. ? *A. myriophyllum*, var. *divaricatum*, Moore, Ind. Fil. 148, as to pl. Galapagos. *Darea rhizophylla* & *Caenopteris rhizophylla*, Hook. & Grev. Ic. t. 193. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Not secured on the

Islands\* by recent collectors. Further distrib. general in trop. of both hemispheres.

A. *RUTACEUM*, Metten. Asplen. 129, t. 5, f. 32-33 (1859); Hook. Sp. Fil. iii. 203; Hook. & Bak. Syn. Fil. 220. — GALAPAGOS IDS.: acc. to Hook. & Bak. l. c., where no collector is mentioned. Further distrib. trop. S. Am.

A. *SERRA*, Langsd. & Fisch. Fil. 16, t. 16 (1810-1818); Hook. Sp. Fil. iii. 154; Moore, Ind. Fil. 166. — GALAPAGOS IDS.: acc. to Moore, l. c. Further distrib. trop. Am.

A. *SERRATUM*, L. Sp. 1079 (1753); Hook. Sp. Fil. iii. 81; Moore, Ind. Fil. 167. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. CHATHAM ISL.: acc. to Moore. Further distrib. general in trop. Am.

#### BLECHNUM, L.

B. *OCCIDENTALE*, L. Sp. ed. 2, 1534 (1763); Sw. Syn. Fil. 113; Jacq. Ic. Pl. Rar. iii. t. 644; Hook. f. (3), 169; Anderss. (1), 130, & (2), 41; Caruel (1), 625. B. *orientale*, L. Sp. 1077 (1753), through clerical or typographical transposition of names with the Asiatic species, an error corrected by Linnaeus himself. — GALAPAGOS IDS.: acc. to Moore, Ind. Fil. 200. ABINGDON ISL.: *Snodgrass & Heller*, no. 815 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 19 (hb. Gr.), 134 (hb. Gr.); mountains east of Tagus Cove, alt. 920 m., *Snodgrass & Heller*, no. 247 (hb. Gr.). CHARLES ISL.: in the upper shaded regions, *Andersson*. CHATHAM ISL.: *Chierchia*; *Baur*, no. 360 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. Mex. to Chili, Brazil, and W. Ind.

Var. *CAUDATUM*, Hook. Sp. Fil. iii. 51 (1860). — GALAPAGOS IDS.: *Capt. Wood*, acc. Hook. l. c., and Moore, l. c. Further distrib. general in trop. Am. and Philippines.

#### CHEILANTHES, Sw.

C. *MICROPHYLLA*, Sw. Syn. Fil. 127 (1806); Hook. Sp. Fil. ii. 84, t. 98 A; Hook. & Bak. Syn. Fil. 135; Rob. & Greenm. (1), 149. C. *heterotrichus*, Anderss. (1), 129, & (2), 40, to judge from character. — GALAPAGOS IDS.: acc. to Moore, Ind. Fil. 247. — ALBEMARLE ISL.: on hillsides near Iguana Cove, *Snodgrass & Heller*, nos. 20 (hb. Gr.), 114 (hb. Gr.). CHARLES ISL.: in shade near summit of mountain, *Andersson* (C. *heterotrichus*). CHATHAM ISL.: southwest end, middle region, *Baur*, no. 369 (hb. Gr.). Further distrib., Mex., Andes of Peru, and Bolivia.



*C. MYRIOPHYLLA*, Desv. Berl. Mag. v. 328, & Jour. Bot. ii. 44, t. 13, f. 1 (1813); Hook. Sp. Fil. ii. 100. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 12 (hb. Gr.). Further distrib. Mex., Andes, Ecuador to Peru.

#### CYSTOPTERIS, Bernh.

*C. FRAGILIS*, Bernh. in Schrad. Neues Jour. Bot. i. pt. 2, 26, 49, t. 2, f. 9 (1806); Wolf (1), 283. — CHARLES ISL.: acc. to Wolf. Of wide distribution. I can but question the identity of the Galapageian plant. The species has been secured on the islands by no other collector, and the specimen in question received only a field determination.

#### GLEICHENIA, Sm.

*G. DICHOTOMA*, Hook. Sp. Fil. i. 12 (1846); Moore, Ind. Fil. 375. — GALAPAGOS IDS.: acc. to Moore, l. c. Further distrib. general in trop.

#### GYMNOGRAMME, Desv.

*G. CHAEROPHYLLA*, Desv. Jour. Bot. i. 26 (1813); Hook. Sp. Fil. v. 136; Hook. & Grev. Ic. Fil. t. 45; Hook. f. (3), 168 (*Gymnogramma*); Anderss. (2), 40. — CHARLES ISL.: *Darwin*. It is not unlikely that a reëxamination will show this specimen to be *G. leptophylla*, Desv., since discovered upon the same island by Baur. Further distrib. Mex., W. Ind., Brazil, Paraguay.

*G. LEPTOPHYLLA*, Desv. Jour. Bot. i. 26 (1813); Hook. Sp. Fil. v. 136; Hook. & Grev. Ic. Fil. t. 25; Rob. & Greenm. (1), 149. — CHARLES ISL., *Baur*, no. 368 (hb. Gr.). Further distrib. trop. of both hemispheres.

*G. TARTAREA*, Desv. Berl. Mag. v. 305; Hook. Sp. Fil. v. 148; Caruel (1), 625. *G. dealbata*, Link, Hort. Berol. ii. 52 (1833). *G. calomelanos*, Rob. & Greenm. (1), 149, not Kaulf. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 25 (hb. Gr.); on mountain east of Tagus Cove, *Snodgrass & Heller*, no. 241 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 782 (hb. Gr.), the yellow-powdered form, ? no. 778 (hb. Gr.), a juvenile state. CHATHAM ISL., *Chierchia*; southwest end, upper region, *Baur*, no. 362 (hb. Gr.). Further distrib. Mex., W. Ind., S. Am., Tropics of the Old World.

#### HYPOLEPIS, Bernh.

*H. REPENS*, Presl, Tent. Pterid. 162 (1836); Hook. Sp. Fil. ii. 64, t. 90 B. *Lonchitis repens*, L. Sp. 1078 (1753). *Cheilanthes repens*,

Kaulf. Enum. Fil. 215 (1824). — GALAPAGOS IDS.: *Capt. J. Wood*, acc. to Hook. l. c. Further distrib. Mex., W. Ind., trop. S. Am.

#### NEPHRODIUM, Rich.

*N. BRACHYODON*, Hook. Sp. Fil. iv. 83 (1862); Hook. & Bak. Syn. Fil. 295. — GALAPAGOS IDS.: *Capt. Wood*. Further distrib. W. Ind., S. Am., Malayan Penin. & Isles.

*N. MACROPHYLLUM*, Bak. Syn. Fil. 300. *Aspidium macrophyllum*, Sw. Syn. Fil., 43, 239 (1806); Hook. Sp. Fil. iv. 55. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook., l. c. Further distrib. general in trop. Am.

*N. MOLLE*, Desv. Mém. Soc. Linn. vi. 258 (1827); Schott, Gen. Fil. t. 10 (1834); Hook. f. (3), 171; Anderss. (1), 131, & (2), 41; Hook. & Bak. Syn. Fil. 293. *Aspidium molle*, Sw. Syn. Fil. 49 (1806); Rob. & Greenm. (1), 149. — ALBEMARLE ISL.: common at 460 m., above Iguana Cove, *Snodgrass & Heller*, nos. 18 (hb. Gr.), 115 (hb. Gr.). CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.); *Baur*. JAMES ISL.: *Darwin*. Further distrib. Mex., W. Ind., S. Am., Tropics of Old World.

*N. UNITUM*, R. Br. Prodr. Fl. Nov. Holl. 148 (1810); Hook. & Bak. Syn. Fil. 289; Caruel (1), 625. — CHATHAM ISL.: *Chierchia*. Further distrib. tropics of both hemispheres.

*N. VILLOSUM*, Presl, Rel. Haenk. i. 38 (1830); Hook. Sp. Fil. iv. 134. *Polypodium villosum*, L. Sp. 1093 (1753). *P. Berteroanum*, Hook. Sp. Fil. iv. 269, not Spreng. *Aspidium villosum*, Sw. Syn. Fil. 56 (1803). — CHATHAM ISL.: *Capt. Wood*, acc. to Hook. l. c. Further distrib. W. Ind. to Chili.

#### NEPHROLEPIS, Schott.

*N. ACUTA*, Presl, Tent. Pterid. 79 (1836); Hook. Sp. Fil. iv. 153. *Aspidium acutum*, Schk. Fil. 32, t. 31. — BINDLOE ISL.: *Snodgrass & Heller*, no. 779 (hb. Gr.). Although the specimens are sterile the somewhat characteristic venation and contour of the pinnae leave no doubt of the identity of this species, which appears not to have been hitherto recorded from the islands. Further distrib. Mex., W. Ind., S. Am., Tropics of Old World.

*N. PECTINATA*, Schott, Gen. Fil. under t. 3 (1834). *N. cordifolia* β, Hook. & Bak. Syn. Fil. 300 (1868). *N. cordifolia*, Rob. & Greenm. (1), 149. *Aspidium pectinatum*, Willd. Sp. Pl. 223 (1810). *Nephrodium pectinatum*, Hook. f. (3), 170; Anderss. (1), 131, & (2), 41.



— CHATHAM ISL.: southwest end, upper region, *Baur*, no. 357 (hb. Gr.). JAMES ISL.: *Darwin*. This smooth-stiped fibrous-rooted fern, with short blunt oblong pinnae, cannot be very satisfactorily placed (as by Hook. & Bak. l. c.) in *N. cordifolia*, Presl, which has tuberous roots, scaly stipes, and triangular often acutish pinnae. Further distrib. Panama, W. Ind., S. Am.

#### NOTHOCHLEANA, R. Br.

*N. SULPHUREA*, J. Sm. in Seem. Bot. Herald, 233 (1852-57); Hook. & Bak. Syn. Fil. 373. *N. candida*, Hook. Sp. Fil. v. 110 (1864). *N. argentea*, Lowe, Ferns Brit. and Exot. i. t. 55 (1856). *Pteris lutea*, Hook. f. (3), 168; Anderss. (1), 129, & (2), 40; not Cav.—GALAPAGOS IDS.: *Cuming*, no. 110, acc. to Hook. l. c. ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 23 (hb. Gr.); north mountain, Elizabeth Bay, *Snodgrass & Heller*, no. 287 (hb. Gr.); mountain east of Tagus Cove, altitude 925 m., *Snodgrass & Heller*, no. 246 (hb. Gr.). JAMES ISL.: *Scouler*. Further distrib. S. W. United States, Mex., Andean S. Am.

#### PELLAEA, Link.

*P. GERANIAEFOLIA*, FÉE, Gen. Fil. 130 (1850-1852); Hook. Sp. Fil. ii. 132; Hook. & Bak. Syn. Fil. 146. *Pteris geraniifolia*, Hook. Ic. Pl. x. t. 915 (1854). — GALAPAGOS IDS.: *Douglas*, acc. to Hook. Sp. Fil. ii. 133. Further distrib. general in trop. reg. Strikingly like *Pteris pedata*, L., but with free veinlets.

#### POLYPODIUM, L.

*P. ANGUSTIFOLIUM*, Sw. Syn. Fil. 27 (1806); Raddi, Fil. Bras. 14, t. 24, f. 2. *P. ensifolium*, Willd. Sp. Pl. v. 152 (1810). *Marginaria ensifolia*, Presl, Tent. Pterid. 188 (1836); Hook. f. (3), 167; Anderss. (1), 127, & (2), 39. — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c., an occurrence apparently doubted by Andersson and not subsequently confirmed by more recent collectors. Further distrib. Mex., W. Ind., S. Am.

*P. AUREUM*, L. Sp. 1087 (1753); Lowe, Ferns Brit. and Exot. ii. t. 56; Hook. Sp. Fil. v. 16. *Pleopeltis aurea*, Presl, Tent. Pterid. 193 (1836); Hook. f. (3), 167; Anderss. (1), 128, & (2), 39. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. JAMES ISL.: *Darwin*, acc. to Hook. f. (3), 167. This large and conspicuous species, secured by these early collectors on the Galapagos Ids., has curiously eluded the subsequent

and much more thorough collectors who have visited the archipelago. Further distrib. Southern U. S., Mex., W. Ind., S. Am., "Australia."

*P. CRASSIFOLIUM*, L. Sp. 1083 (1753); Hook. Sp. Fil. v. 62; Hemsl. Biol. Cent.-Am. Bot. iii. 656; N. E. Brown, Trans. Linn. Soc. ser. 2, vi. 85. *P. coriaceum*, Raddi, Fil. Bras. 16, t. 25. *Pleuridium crassifolium*, Fée, Gen. Fil. 273. — GALAPAGOS IDS.: *Capt. Wood* (hb. Kew). Further distrib. Mex., W. Ind. to Peru and Brazil.

*P. INCANUM*, Sw. Prodr. 131 (1788); Hook. Sp. Fil. iv. 208. *Acrostichum polypodioides*, L. Sp. 1068 (1753). *Marginaria incana*, Presl, Tent. Pterid. 188 (1836); Hook. f. (3), 166; Anderss. (1), 127, & (2), 38 (where *P. incisum*, Sw., is incorrectly given as a synonym, instead of the correct *P. incanum*, Sw.). — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. ALBEMARLE ISL.: *Macrae*. CHARLES ISL.: *Darwin*. Further distrib. U. S., Mex., W. Ind., S. Am., Trop. Afr.

*P. LANCEOLATUM*, L. Sp. 1082 (1753). *P. macrocarpum*, Willd. Sp. Pl. v. 147 (1810). *P. lepidotum*, Willd. in Schlecht. Adumbr. 17, t. 8 (1825). *Pleopeltis ensifolia*, Hook. Ex. Fl. t. 62 (1823). *P. macrocarpa*, Kaulf. Enum. Fil. 245 (1824); Hook. f. (3), 167; Anderss. (1), 127, & (2), 39. *P. lanceolata*, Presl, Tent. Pterid. 193 (1836); Anderss. (1), 128, & (2), 39. *P. lepidota*, Hook. f. (3), 167; Anderss. (1), 126, & (2), 39. *Lepicystis lanceolata*, Diels in Engl. & Prantl, Nat. Pflanzenf. i. Abt. 4, 323 (1899). — ALBEMARLE ISL.: Iguana Cove, on trees and bushes, alt. 310 m., *Snodgrass & Heller*, no. 127 (hb. Gr.). CHARLES ISL.: *Darwin*; in upper shaded region, *Andersson*. JAMES ISL.: *Darwin*. Further distrib. trop. of both hemispheres.

*P. LEPIDOPTERIS*, Kunze, Linnaea, xiii. 132 (1839); Hook. Sp. Fil. iv. 211; Hook. & Bak. Syn. Fil. 346. *Acrostichum lepidopteris*, Langsd. & Fisch. Fil. i. 5, t. 2 (1810). — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook., l. c. Further distrib. general in trop. Am.

*P. LORICEUM*, L. Sp. 1086 (1753); Hook. Sp. Fil. v. 21. *P. punctulatum*, Hook. Ic. Pl. t. 720 (1848). *Goniophlebium loriceum*, J. Sm. in Hook. Gen. Fil. under t. 51 (1838); Moore, Ind. Fil. 392. — GALAPAGOS IDS.: acc. to Moore, l. c. Further distrib. general in trop. Am.

*P. PALEACEUM*, Hook. f. (3), 166; ? Anderss. (1), 126, & (2), 38; ? Hook. Sp. Fil. iv. 261. ? *Alsophila* sp., Rob. & Greenm. (1), 149. — CHARLES ISL.: *Darwin*. JAMES ISL.: *Darwin*. Endemic. To this species I would doubtfully refer specimens from ALBEMARLE ISL., Iguana Cove, *Snodgrass & Heller*, no. 113 (hb. Gr.); CHARLES ISL., *Andersson*, *Lee* (hb. U. S. Nat. Mus.); and CHATHAM ISL., southwest

end, middle region, *Baur*, no. 367 (hb. Gr.). These plants, none of which is in quite satisfactory condition, represent one, or perhaps several, very nearly related species close to *P. punctatum*, Thunb., and *P. prasinum*, Baker.

*P. PECTINATUM*, L. Sp. 1085 (1753); Hook. Sp. Fil. iv. 203; Caruel (1), 625. *P. paradisiae*, Langsd. & Fisch. Ic. Fil. 11, t. 11 (1810-1818); Hook. f. (3), 165; Andersson (1), 126, & (2), 38; Rob. & Greenm. (1), 149. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 14 (hb. Gr.), 133 (hb. Gr.). CHARLES ISL.: *Andersson*. CHATHAM ISL.: *Chierchia*; southwest end, middle region, *Baur*, no. 358 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. Mex., W. Ind., S. Am.

*P. PERCUSSUM*, Cav. Prael. 243 (1801); Sw. Syn. Fil. 26; Hook. Fil. Exot. t. 59, & Sp. Fil. v. 55. *P. cuspidatum*, Presl, Rel. Haenk. 20, t. 1, f. 3 (1825). *Lepicystis perculsa*, Diels in Engl. & Prantl, Nat. Pflanzenf. i. Abt. 4, 323 (1899). — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. Fil. Exot. l. c. This fern does not appear to have been secured by any recent collector in the Galapagos Islands. Further distrib. trop. S. Am.

*P. PHYLLITIDIS*, L. Sp. 1083 (1753); Hook. Sp. Fil. v. 38. *Campyloneurum Phyllitidis*, Presl, Tent. Pterid. 190 (1836); Hook. f. (3), 167; Anderss. (1), 128, & (2), 39. — JAMES ISL.: *Darwin*, acc. to Hook. f. (3), 167. Not secured by more recent collectors. Further distrib. trop. Am.

*P. PLEIOSORUM*, Hook. f. (3), 166 (as *pleiosoros*); Anderss. (1), 126, & (2), 38 (as *Pleiosoros*). — JAMES ISL.: *Darwin*. Endemic. This species is briefly referred to by Hook. Sp. Fil. iv. 262, where treated as an unrecognizable and therefore negligible synonym. Nevertheless the original characterization is sufficiently detailed to show that the plant was distinct from any other Galapageian species unless it be *P. paleaceum*, Hook. f. The type will probably be found in the Darwin collection at the herbarium of Cambridge University.

*P. RUDE*, Kunze, Linnaea, xiii. 133 (1839); Hook. Sp. Fil. iv. 243. — GALAPAGOS IDS.: *Capt. Wood*? acc. to Hook. l. c. Further distrib. Mex. to Peru and Brazil.

*P. SQUAMATUM*, L. Sp. 1086 (1753); Hook. Sp. Fil. iv. 209; Rob. & Greenm. (1), 149. *P. tridens*, Kunze, Farnkr. i. 23, t. 13, f. 1 (1840). *Pleopeltis* sp., Anderss. (1), 128, & (2), 39. *Lepicystis squamata*, J. Sm. acc. to Diels in Engl. & Prantl, Nat. Pflanzenf. i. Abt.

4, 323 (1899). — GALAPAGOS IDS.: *Cuming*, no. 112; *Habel*, acc. to Hemsl. in litt.\* ABINGDON ISL.: *Snodgrass & Heller*, no. 814 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 13 (hb. Gr.); mountain east of Tagus Cove, alt. 770 m., *Snodgrass & Heller*, nos. 238 (hb. Gr.), 900 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 783 (hb. Gr.). CHARLES ISL.: in the upper region, *Andersson*; *Lee* (hb. U. S. Nat. Mus.); *Baur*, no. 373 (hb. Gr.). CHATHAM ISL.: *Capt. Wood*; *Snodgrass & Heller*, no. 499 (hb. Gr.); southwestern end, upper region, *Baur*, no. 370 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 372 (hb. Gr.); *Snodgrass & Heller*, no. 705 (hb. Gr.). NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, no. 324 (hb. Gr.). Further distrib. Peru to Mex., and W. Ind.

P. sp. — WENMAN ISL.: acc. to ms. notes of Mr. Heller an undetermined species of *Polypodium* was observed in a cave. The matter is of interest since it is the first case in which a fern has been reported from any of the lower islands.

#### PTERIS, L.

P. AQUILINA, var. ESCULENTA, Hook. f. Fl. Nov. Zeal. ii. 25 (1855); Hook. Sp. Fil. ii. 197. *P. esculenta*, Forst. Prodr. 79 (1786); Schkuhr, Fil. t. 97. *P. aquilina*, var. *caudata*, Rob. & Greenm. (1), 149, not Hook. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. ALBEMARLE ISL.: 320 m. above Iguana Cove, *Snodgrass & Heller*, nos. 866, 867 (both in hb. Gr.). CHATHAM ISL.: southwest end, upper region, *Baur*, no. 363 (hb. Gr.). Generally distrib. in trop.

P. INCISA, Thunb. Fl. Cap. 733 (1823); Hook. Sp. Fil. ii. 230. *P. pallida*, Raddi, Fil. Bras. 49, t. 71 (1825). — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c.

P. PEDATA, L. Sp. ed. 2, 1532 (1763); Hook. & Bak. Syn. Fil. 167. *Litobrochia pedata*, Presl, Tent. Pterid. 149 (1836); Hook. f. (3), 168; Anderss. (1), 129, & (2), 40 (*Lithobrachia*). — GALAPAGOS IDS.: *Cuming*, no. 107; *Capt. Wood*. ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 22 (hb. Gr.), 24 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *Lee* (hb. U. S. Nat. Mus.); *Baur*, no. 364 (hb. Gr.). CHATHAM ISL.: southwest end, middle region, *Baur*, no. 365 (hb. Gr.). JAMES ISL.: *Darwin*; *Douglas*; *Cuming*. Further distrib. W. Ind., S. Am.

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\* This and all following references to the plants of Dr. Habel are based upon a list preserved at the Royal Gardens, Kew, a transcription of this list having been kindly forwarded to the writer by Mr. W. Botting Hemsley.

*P. PROPINQUA*, var. *CUMINGIANA*, Ag. Sp. Gen. Pterid. 65; Hook. Sp. Fil. ii. 223. — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. Further distrib. Venezuela to Mex., Trinidad. This species is by Hook. & Bak. (Syn. Fil. 171) regarded as a form of *P. aculeata*, Sw.

#### TAENITIS, Sw.

*T. ANGUSTIFOLIA*, R. Br. Prodr. 154, in note (1810); Hook. Sp. Fil. v. 187; Hook. & Bak. Syn. Fil. 396. *Vittaria costata*, Kunze, Analect. Pterid. 29, t. 18, f. 2, also f. 1, *a* and *b* (1837). — GALAPAGOS IDS.: *Capt. Wood*, acc. to Hook. l. c. Further distrib. W. Ind., Colombia to Brazil.

### SALVINIACEAE.

#### AZOLLA, Lam.

*A. CAROLINIANA*, Willd. Sp. Pl. v. 541 (1810); Anderss. (1), 132, & (2), 42. — CHARLES ISL.: in cold spring of the middle region, *Andersson*.

#### SALVINIA, L.

*S. sp.*, Wolf (1), 284. — CHARLES ISL.: in brooks near hacienda, acc. to Wolf, l. c.

### LYCOPODIACEAE.

#### LYCOPodium, L.

*L. CLAVATUM*, L. Sp. 1101 (1753); Rob. & Greenm. (1), 149. — CHATHAM ISL.: southwest end, upper region, *Baur*, no. 375 (hb. Gr.). Of wide distribution.

*L. DICHOTOMUM*, Jacq. Enum. Vindob. 314 (1762), & Hort. Vindob. iii. 26, t. 45; Spring, Monog. Lycop. i. 41, ii. 18; Hemsl. Biol. Cent.-Am. Bot. iii. 701; Bak. Fern-allies, 16. *L. pithyoides*, Schlecht. & Cham. Linnaea, v. 623 (1830). *L. mandiocanum*, Raddi, Fil. Bras. 77, t. 4 (1825). — GALAPAGOS IDS.: acc. to Hemsley and Baker, ll. cc. Further distrib. trop. Am., Madagascar.

Dr. Wolf (1), 283, refers to two undetermined species of *Lycopodium* found on Charles Isl.

### POTAMOGETONACEAE.

#### POTAMOGETON, Tourn.

*P. PECTINATUS*, L. Sp. 127 (1753); Schumann in Mart. Fl. Bras. iii. pt. 3, 693 (where widely interpreted). — ALBEMARLE ISL. Iguana Cove, *Snodgrass & Heller*, no. 941a (hb. Gr.). Of cosmopolitan distribution.

As to robustness and leaf-breadth the Galapageian specimen at hand appears to correspond most closely to the form *P. Vaillantii*, Roem. & Schultes, Syst. iii. 514 (1818), which is intermediate between the very slender typical form and the broad-leaved form which is often separated as *P. zosteraceus*, Fries, Nov. ed. 2, 51 (1828).

#### RUPPIA, L.

*R. MARITIMA*, L. Sp. 127 (1753); Reichenb. Ic. Fl. Germ. vii. t. 17, f. 26. — *ALBEMARLE ISL.*: Elizabeth Bay, lava fields near the beach, *Snodgrass & Heller*, no. 938 (hb. Gr.). Widely distributed. A species not hitherto recorded on the Galapagos Ids.

#### NAJADACEAE.

##### NAJAS, L.

*N. MARINA*, L., var. *LATIFOLIA* A. Br. ex Schum. in Mart. Fl. Bras. iii. pt. 3, 725 (1894); Rendle, Trans. Linn. Soc. ser. 2, v. 396, t. 39, f. 11. *N. latifolia*, A. Br. Journ. Bot. ii. 276 (1864). — *ALBEMARLE ISL.*: Iguana Cove, *Snodgrass & Heller*, no. 940a (hb. Gr.). The material at hand varies somewhat as to the arming of the internodes. In some instances they are smooth, as in var. *latifolia*; in other stems they are rather conspicuously armed. There is reason to believe that this is individual variation, and the long rather broad many-toothed leaves are those of var. *latifolia*. Further distrib. trop. S. Am.

#### GRAMINEAE.

##### ANTHEPHORA, Schreb.

*A. ELEGANS*, Schreb. Besch. Gräs. ii. 105, t. 44 (1810); Kunth, Enum. i. 169; Anderss. (1), 141, & (2), 48; Rob. & Greenm. (1), 149. ? *A. cuspidata*, Anderss. ll. cc. (differences not greater than in the various continental forms, which have not yet been successfully separated). — *CHARLES ISL.*: *Andersson* (hb. Gr.); *Baur*, no. 346 (hb. Gr.), subglabrous form. *CHATHAM ISL.*: northern part, *Baur*, no. 347 (hb. Gr.), also subglabrous. *INDEFATIGABLE ISL.*: *Andersson* (form *A. cuspidata*). *JAMES ISL.*: on James Bay, *Snodgrass & Heller*, no. 397 (hb. Gr.). Further distrib. Mex., W. Ind., S. Am.

##### ARISTIDA, L.

*A. DIVULSA*, Anderss. (1), 143, & (2), 49; Rob. & Greenm. (1), 149. — *ALINGDON ISL.*: *Snodgrass & Heller*, no. 809 (hb. Gr.). *BINDLOE*



ISL.: *Baur*, no. 336 (hb. Gr.). CHATHAM ISL.: in stony places, *Andersson* (hb. Gr.). Endemic.

A. REPENS, Trin. Mém. Acad. Pétersb. ser. vi. i. 87 (1831); Trin. & Rupr. *ibid.* vii. 128 (1842); Hook. f. (3), 175; Anderss. (1), 146, & (2), 50. — JAMES ISL.: *Douglas*. Not secured or at least not recognized on the islands since.

A. SUBSPICATA, Trin. & Rupr. l. c. 125 (1842); Steud. Syn. 137; Hook. f. (3), 174; Anderss. (1), 143, & (2), 49; Rob. & Greenm. (1), 149. A. *caudata*, Anderss. (1), 144, & (2), 49; Rob. & Greenm. (1), 149. A. *compacta*, Anderss. (1), 145, & (2), 50. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: *Macrae* (hb. Gr.); in dry upper region, *Andersson* (hb. Gr.); eastern portions, Cowley Bay, *Baur*, no. 340 (hb. Gr.); Elizabeth Cove, *Snodgrass & Heller*, no. 273, past flowering and doubtful (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 152 (hb. Gr.); everywhere on sandy hillsides in tufa soil, the most abundant grass above the cove, *Snodgrass & Heller*, no. 209 (hb. Gr.). BARRINGTON ISL.: *Baur*, no. 339 (hb. Gr.); *Snodgrass & Heller*, no. 488 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 776 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson* (hb. Gr.); south of Conway Bay, *Baur*, no. 338 (hb. Gr.); northern part, *Snodgrass & Heller*, no. 653 (hb. Gr.). JAMES ISL.: James Bay, on sand in crevices of lava rock near beach, *Snodgrass & Heller*, no. 396 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 581 (hb. Gr.); south, *Snodgrass & Heller*, no. 566 (hb. Gr.). Further distrib. S. Am.

A. VILLOSA, Rob. & Greenm. (1), 144, 149. — DUNCAN ISL.: *Snodgrass & Heller*, no. 699 (hb. Gr.). JERVIS ISL.: *Baur*, no. 337 (hb. Gr.). Endemic.

#### BOUTELOUA, Lag.

B. PILOSA, Benth. acc. to Wats. Proc. Am. Acad. xviii. 179 (1883). *Eutriana pilosa*, Hook. f. (3), 173; Anderss. (1), 147, & (2), 52 (where by Darwin is meant *Macrae*), t. 1, f. 3; Rob. & Greenm. (1), 149. — ABINGDON ISL.: *Snodgrass & Heller*, no. 807 (hb. Gr.). ALBEMARLE ISL.: *Macrae*; in lower rocky region, *Andersson*; southern portion, *Baur*, no. 352 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, nos. 36 (hb. Gr.), 109 (hb. Gr.), 139 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 216 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 490 (hb. Gr.). CHATHAM ISL.: *Andersson*. INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 655 (hb. Gr.). JAMES ISL.: on sea bluffs of James Bay, *Snodgrass & Heller*, no. 393

(hb. Gr.). JERVIS ISL.: *Baur*, no. 351 (hb. Gr.): SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 567 (hb. Gr.); south, *Snodgrass & Heller*, no. 611 (hb. Gr.). Endemic.

#### CENCHRUS, L.

*C. DISTICHOPHYLLUS*, Griseb. Cat. Pl. Cub. 234 (1866); Rob. & Greenm. (1), 148. — ALBEMARLE ISL.: southern portion, *Baur*, no. 335 (hb. Gr.), wrongly recorded as from Hood Isl. by Rob. & Greenm. l. c. Sterile and hence doubtful. Further distrib. Cuba.

*C. GRANULARIS*, Anderss. (1), 140, & (2), 47; Rob. & Greenm. (1), 148. — ALBEMARLE ISL.: Tagus Cove, from beach to 180 m. altitude, not abundant, *Snodgrass & Heller*, no. 211 (hb. Gr.). CHARLES ISL.: *Baur*, no. 324 (hb. Gr.); *Snodgrass & Heller*, no. 456 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *A. Agassiz* (hb. U. S. Nat. Mus.). SEYMOUR ISL.: south, *Snodgrass & Heller*, nos. 593, 594 (both in hb. Gr.). Endemic.

*C. PLATYACANTHUS*, Anderss. (1), 139, & (2), 47; Rob. & Greenm. (1), 148. — ABINGDON ISL.: *Snodgrass & Heller*, no. 808 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 37 (hb. Gr.), 112 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 484 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 781 (hb. Gr.). CHARLES ISL.: abundant, *Andersson*; *Snodgrass & Heller*, no. 456a (hb. Gr.). CHATHAM ISL.: *Andersson*; *Snodgrass & Heller*, no. 550 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 636 (hb. Gr.). HOOD ISL.: *Baur*, no. 323 (hb. Gr.); *Snodgrass & Heller*, no. 716 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 678 (hb. Gr.). JAMES ISL.: James Bay, common along the coast in sand and lava soil, *Snodgrass & Heller*, no. 395 (hb. Gr.). NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, no. 317 (hb. Gr.). Endemic so far as known but apparently spreading rapidly in the manner of an introduced weed.

*C. sp.* — CHATHAM ISL.: *Snodgrass & Heller*, no. 520 (hb. Gr.). A large soft-pubescent species nearly related to, if not identical with, some of the very diverse forms in the Hawaiian and other Pacific Islands now collected under *C. calyculatus*, Cav. and its supposed synonyms.

#### CHLORIS, Sw.

*C. anisopoda*, nov. sp., annua, radice fibrosa, culmis pluribus caespitosis suberectis tenuibus teretibus glaberrimis 5-7-nodosis; vaginis striatis

marginē ciliata excepta glaberrimis teretibus spicas inferiores fere in toto includentibus, foliæ parte libera brevi lineari attenuata subpungente præter basis longē ciliatæ glaberrima, spicis inferioribus brevibus vaginis arcte involutis, supremis subternis erectis tenuibus flexuosis cum pedunculo gracile tereti bene exsertis, spiculis tenuibus teretibus adpressis bifloris, glumis sterilibus binis inaequalibus tenuibus lanceolati-linearibus attenuatis acutissimis uninervis translucētibus basi breviter fasciculatim barbatis, palea inferiori oblonga ciliata paullo infra apicē subretusa cum arista recta tenui tenuissime barbata suæ longitudinī superante munita, palea superiori angustē lanceolata acutissima sed exaristata, flosculi sterilis pedicellati abortivi palea inferiori longē aristata. — *C. sp.* Rob. & Greenm. (1), 149. — CHARLES ISL.: *Baur*, no. 333 (hb. Gr.); *Snodgrass & Heller*, no. 459 (hb. Gr.). Endemic. Culms 2.5 to 4 dm. high; leaf blades 2 to 6 cm. long. Spikelets including the awns 6 mm. long, very slender. A species distinguished from most of its congeners by having inflorescences springing from nearly all the nodes, the lower inflorescences being almost or quite enveloped by the sheaths of the leaves.

*C. ELEGANS*, HBK. Nov. Gen. & Sp. i. 166, t. 49 (1815). — CHARLES ISL.: *Snodgrass & Heller*, no. 461 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 579 (hb. Gr.). Further distrib. southwestern U. S., Mex.

*C. RADIATA*, Sw. Prodr. 26 (1788); Rob. & Greenm. (1), 149. — CHARLES ISL.: *Baur*, no. 344 (hb. Gr.). Further distrib. W. Ind., S. Am.

#### CHUSQUEA, Kunth.

*C. sp.* — ALBEMARLE ISL.: on mountain east of Elizabeth Cove, alt. 923 m., *Snodgrass & Heller*, no. 230 (hb. Gr.), old, dead, and leafless culms only, but the genus recognizable from the peculiar mode of branching. Belonging to a group of tropical S. American grasses of the bamboo tribe, not heretofore noted upon the islands.

#### ELEUSINE, Gaertn.

*E. AEGYPTICA*, Desf. Fl. Atl. i. 85 (1798), as *aegyptia*. *E. aegyptiaca*, Rob. & Greenm. (1), 149. *Dactyloctenium aegyptiacum*, Willd. Enum. Hort. Berol. 1029 (1809); Caruel (1), 621; Rose (1), 138. — CHATHAM ISL.: *Chierchia*; *A. Agassiz*; *Snodgrass & Heller*, no. 551 (hb. Gr.). HOOD ISL.: *Baur*, no. 326 (hb. Gr.). Of wide distribution.

E. INDICA, Gaertn. Fruct. i. 8 (1788); Kunth, Enum. i. 272; Anderss. (1), 147, & (2), 52; Rose (1), 138; Caruel (1), 621; Rob. & Greenm. (1), 149. — CHARLES ISL.: in grassy places, middle region, *Andersson*; *Baur*, no. 374 (hb. Gr.); *Snodgrass & Heller*, no. 462 (hb. Gr.). CHATHAM ISL.: *Chierchia*; *A. Agassiz*; southwest end, middle region, *Baur*, no. 349 (hb. Gr.); *Snodgrass & Heller*, no. 552 (hb. Gr.). Of wide distribution.

## ERAGROSTIS, Host.

E. BAHIENSIS, Roem. & Sch. Mant. ii. 318 (1824). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 110 (hb. Gr.). Further distrib. S. Am.

E. CILIARIS, Link, Hort. Berol. i. 192 (1827); Rob. & Greenm. (1), 149: *Poa ciliaris*, L. Syst. ed. 10, 875 (1760); Hook. f. (3), 175; Anderss. (1), 150, & (2), 52. — ABINGDON ISL.: *Snodgrass & Heller*, no. 810 (hb. Gr.). ALBEMARLE ISL.: *Macrae*; Tagus Cove, *Snodgrass & Heller*, no. 218 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 777 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *Baur*, without number (hb. Gr.); *Snodgrass & Heller*, no. 457 (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson*; *Baur*, no. 328 (hb. Gr.); *Snodgrass & Heller*, nos. 542 (hb. Gr.), 559 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 724 (hb. Gr.). JAMES ISL.: Orchilla Bay, *Baur*, no. 329 (hb. Gr.). NARBOROUGH ISL.: Mangrove Point, in crevices of lava near the coast, abundant, *Snodgrass & Heller*, no. 306 (hb. Gr.). TOWER ISL.: *Baur*, no. 330 (hb. Gr.); *Snodgrass & Heller*, no. 800 (hb. Gr.). Further distrib. W. Ind., S. Am.

E. MAJOR, Host. Gram. iv. 14, t. 24 (1809). *Poa megastachya*, Koehl. Desc. Gram. 181 (1802); Anderss. (1), 150, & (2), 52; Rob. & Greenm. (1), 149. — GALAPAGOS IDS.: *Habel*. BARRINGTON ISL.: *Baur*, no. 332 (hb. Gr.); *Snodgrass & Heller*, no. 489 (hb. Gr.). CHARLES ISL.: dry places on the shore, *Andersson*; *Snodgrass & Heller*, no. 460 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 558 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 643 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 715 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 590 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 798 (hb. Gr.). Of wide distribution.

E. PILOSA, Beauv. Agrost. 71 (1812). *Poa pilosa*, L. Sp. 68 (1753); Hook. f. (3), 175; Anderss. (1), 150, & (2), 52. — GALAPAGOS IDS.:

*Habel*. JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Further distrib. trop. reg.

#### ERIOCHLOA, HBK.

E. DISTACHYA, HBK. Nov. Gen. & Sp. i. 95, t. 30 (1815); Kunth, Enum. i. 72. *Helopus brachystachys*, Trin. Sp. Gram. iii. t. 277 (1836). — CHATHAM ISL.: *Snodgrass & Heller*, no. 547 (hb. Gr.). Further distrib. continental S. Am. from Panama to Brazil.

#### LEPTOCHLOA, Beauv.

L. ALBEMARLENSIS, Rob. & Greenm. (1), 145, 149. — ALBEMARLE ISL.: southern portion, *Baur*, no. 341 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 58 (hb. Gr.). Endemic.

L. FILIFORMIS, Roem. & Sch. Syst. ii. 580 (1817); Hook. f. Fl. Brit. Ind. vii. 298; not Beauv. — DUNCAN ISL.: *Snodgrass & Heller*, no. 697 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 580 (hb. Gr.). Widely distributed in the tropics of both hemispheres.

L. LINDLEYANA, Kunth, Rev. Gram. ii. 655, t. 215 (1829), & Enum. i. 525; Rob. & Greenm. (1), 149. *L. hirta*, Nees acc. to Steud. Syn. i. 209 (1855). *L. Hookeri*, Anderss. (2), 51. *Trichoneuron Hookeri*, Anderss. (1), 149, & (2), 51, t. 1, f. 2. *Calamagrostis pumila*, Hook. f. (3), 176. — ALBEMARLE ISL.: *Macrae* (hb. Gr.); in the most sterile places, *Andersson*; eastern portion, *Baur*, no. 242 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 212 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 790 (hb. Gr.). CHATHAM ISL.: *Andersson*. Endemic.

L. MUCRONATA, Kunth, Rev. Gram. i. 91 (1829). — BARRINGTON ISL.: *Snodgrass & Heller*, no. 491 (hb. Gr.). Not previously observed on these islands. Further distrib. southern U. S., Mex.

L. VIRGATA, Beauv. Agrost. 71 (1812); Anderss. (1), 147, & (2), 51. — CHARLES ISL.: upper grassy region, *Andersson* (hb. Gr.). Further distrib. Mex., W. Ind., S. Am.

#### OPLISMENUS, Beauv.

O. SETARIUS, Roem. & Sch. Syst. ii. 481 (1817); Rob. & Greenm. (1), 148 (a species reduced by some to *O. undulatifolius*, Beauv.). — CHATHAM ISL.: southwest end, middle region, *Baur*, no. 322 (hb. Gr.). Further distrib. U. S., Mex., W. Ind., S. Am. The sterile and indeterminate *Oplismenus* mentioned by Caruel (1), 621, as collected on Chatham Isl. by *Chierchia* was probably of this species.

## PANICUM, L.

*P. COLONUM*, L. Syst. ed. 10, 870 (1760); Trin. Ic. ii. t. 160; Hook. f. (3), 172. *Oplismenus colonus*, HBK. Nov. Gen. & Sp. i. 108 (1815); Anderss. (1), 136, & (2), 45. — CHARLES ISL.: Darwin; in somewhat swampy places, middle region, Andersson. Further distrib. general in trop. regions.

*P. FASCICULATUM*, Sw. Prodr. 22 (1788), & Fl. Ind. Occ. i. 145; Anderss. (1), 135, & (2), 44. — CHARLES ISL.: Snodgrass & Heller, no. 455 (hb. Gr.). INDEFATIGABLE ISL.: Andersson; northern part, Snodgrass & Heller, no. 649 (hb. Gr.). JAMES ISL.: common on sea-bluff on James Bay, Snodgrass & Heller, no. 392 (hb. Gr.). Further distrib. W. Ind., S. Am.

*P. FLUITANS*, Retz. Obs. iii. 8 (1783); Anderss. (1), 136, & (2), 45. *P. paspalodes*, Pers. Syn. i. 81 (1805). *P. paspaloides*, auct. — CHATHAM ISL.: in stagnant pools, middle region, Andersson (hb. Gr.); Snodgrass & Heller, no. 557 (hb. Gr.). HOOD ISL.: on the margin of a mud lake, Snodgrass & Heller, no. 746 (hb. Gr.). Further distrib. W. Ind., S. Am., trop. of Old World.

*P. FUSCUM*, Sw. Prodr. 23 (1788); Anderss. (1), 135, & (2), 44; Caruel (1), 621; Rose (1), 138. — CHARLES ISL.: Andersson; Chierchia. CHATHAM ISL.: Andersson; A. Agassiz. Further distrib. W. Ind., S. Am. Andersson, ll. cc., distinguishes three forms or varieties: *vegetius*, *firmitus*, and *pubescens*.

*P. HIRTICAULUM*, J. & C. Presl, Rel. Haenk. i. 308 (1830); Kunth, Enum. i. 101; *P. hirticaulon*, Anderss. (1), 134, & (2), 43 (incl. var. *majus*, typical, and var. *glabrescens*, not very clearly marked); Rose (1), 138; Rob. & Greenm. (1), 148; a species sometimes reduced to *P. ayennense*, Lam. — BARRINGTON ISL.: Snodgrass & Heller, no. 492 (hb. Gr.). CHARLES ISL.: Andersson. CHATHAM ISL.: Andersson; (hb. Gr.); A. Agassiz; Snodgrass & Heller, no. 548 (hb. Gr.). GARDNER ISL.: Snodgrass & Heller, no. 648 (hb. Gr.). HOOD ISL.: Baur, no. 345 (hb. Gr.); Snodgrass & Heller, no. 722 (hb. Gr.). INDEFATIGABLE ISL.: Andersson (hb. Gr.); northern part, Snodgrass & Heller, no. 661 (hb. Gr.). SEYMOUR ISL.: north, Snodgrass & Heller, no. 565 (hb. Gr.); south, Snodgrass & Heller, no. 612 (hb. Gr.). It is noteworthy that this grass, now widely distributed and apparently common in the archipelago, was not noted or collected by Darwin or any of the earlier collectors upon the islands, a fact which strongly suggests recent introduction. Further distrib. Mex.



Var. MINUS, Anderss. (1), 135, & (2), 44. — CHARLES ISL.: *Andersson*; *Snodgrass & Heller*, no. 454 (hb. Gr.). CHATHAM ISL.: *Andersson*. Endemic.

P. MOLLE, Sw. Prodr. 22 (1788); Caruel (1), 621. — CHATHAM ISL.: *Chierchia*, acc. to Caruel, l. c. Further distrib. W: Ind., S. Am.; also introd. in trop. Asia.

P. MULTICULMUM, Anderss. (1), 133, & (2), 43. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 138 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 487 (hb. Gr.). CHARLES ISL.: in springs of the interior, *Andersson* (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 696 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 634 (hb. Gr.). Endemic.

P. SANGUINALE, L. Sp. 57 (1753). — CHATHAM ISL.: *Snodgrass & Heller*, no. 513 (hb. Gr.). Not secured or reported by earlier explorers, hence probably a recent introduction. Cosmopolitan weed.

P. SEROTINUM, Trin. Gram. Panic. 166 (1826). *Paspalus serotinus*, Fluegge, Gram. Monogr. 145 (1810); *Paspalum serotinum*, Kunth, Enum. i. 47; Anderss. (1), 132, & (2), 42. *Digitaria serotina*, Michx. Fl. i. 46 (1803); Hook. f. (4), 261. — CHARLES ISL.: *Edmonston* acc. to Hook. f., l. c. There can be little doubt that there was some mistake in this identification, but as it has not been possible to see the specimen the error cannot be corrected here. The species is of the southern U. S.

#### PASPALUM, L.

P. CANESCENS, Anderss. (1), 132, & (2), 42; Rob. & Greenm. (1), 148. *Panicum fuscum*, Rob. & Greenm. (1), 148, not Sw. — ALBEMARLE ISL.: upper part, *Andersson*; southern portion, *Baur*, no. 343 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 198 (hb. Gr.). CHARLES ISL.: *Baur* (hb. Gr.). NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, nos. 312 (hb. Gr.), 336 (hb. Gr.). Endemic.

P. CONJUGATUM, Berg. Act. Helv. vii. 129, t. 8 (1772); Anderss. (1), 132, & (2), 42; Rob. & Greenm. (1), 148. — CHARLES ISL.: grassy places in the more fertile parts, *Andersson*. CHATHAM ISL.: southwest end, middle region, *Baur*, no. 350 (hb. Gr.). Further distrib. Mex., W. Ind., S. Am., trop. Africa.

P. DISTICHUM, L. Amoen. Acad. v. 391 (1760); Burm. f. Fl. Ind. 23. *P. vaginatum*, Sw. Prodr. 21 (1788); Rob. & Greenm. (1), 148. — JAMES ISL.: Orchilla Bay, in a sterile state, *Baur*, no. 334 (hb. Gr.). Further distrib. trop. and subtrop. regions.

*P. LONGE-PEDUNCULATUM*, Le Conte (Le Comte), Journ. Phys. xci. 284 (1820); Kunth, Enum. i. 56; Hook. f. (3), 172; Anderss. (1), 132, & (2), 42. *Panicum fuscum*, Rob. & Greenm. (1), 148, not Sw. — ALBEMARLE ISL.: *Macrae*; Iguana Cove, *Snodgrass & Heller*, no. 131 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 199 (hb. Gr.), 891 (hb. Gr.), 892 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 775 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *Baur*, no. 148 (hb. Gr.). This species is by some reduced to *P. arenarium*, Schrad., which however is a later name. Further distrib. southern U. S. to Brazil.

*P. PENICILLATUM*, Hook. f. (3), 171; Anderss. (1), 132, & (2), 42. — CHARLES ISL.: *Darwin*. Not since collected. Endemic.

*P. SCROBICULATUM*, L. Mant. i. 29 (1767), as *scrobiculata*; Caruel, (1), 621. — CHATHAM ISL.: *Chierchia*, acc. to Caruel. General distrib. tropics of the Old World. It is remarkable, if Prof. Caruel was correct in his identification of this gerontogeous grass, that no trace of it has been found in the Galapagos Archipelago by any other collector.

*P. sp.* — INDEFATIGABLE ISL.: north, *Snodgrass & Heller*, no. 669 (hb. Gr.). Resembling *P. canescens*, Anderss., but with the leaves bearded upon both surfaces with a long and very fine villosity, and the spikelets considerably larger. Probably a new species.

#### PENNISETUM, Rich.

*P. PAUPERUM*, Nees acc. to Steud. Syn. 102 (1855). *P. exaltatum*, Hook. f. & Jacks. Ind. Kew. i. 112, 1893 (see reference under *Amphochaeta*). *Amphochaeta exaltata*, Anderss. (1), 137, & (2), 45, t. 1, f. 2. *Gymnothrrix paupera*, Nees acc. to Steud. l. c. — ALBEMARLE ISL.: *Andersson* (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, nos. 16 (hb. Gr.), 141 (hb. Gr.); near Tagus Cove, altitude 150 to 1230 m., in large clumps 1 to 2 m. high, *Snodgrass & Heller*, no. 223 (hb. Gr.). Endemic, and so far as known confined to the single Island.

#### SETARIA, Beauv.

*S. FLORIANA*, Anderss. (1), 138, & (2), 46. — CHARLES ISL.: *Andersson*. Not seen by the writer. Endemic.

*S. SETOSA*, Beauv. Agrost. 51 (1812). *S. caudata*, R. & S. Syst. ii. 495 (1817), slender form. *S. Antillarum*, Kunth, Rev. Gram. i. 46 (1829); Anderss. (1), 138, & (2), 46; Rob. & Greenm. (1), 148. ? *S. Rottleri*, Hook. f. (3), 172; Anderss. (1), 139, & (2), 46; not Spr.

*Chaetochloa setosa*, Scribn. U. S. Div. Agros. Bull. iv. 39 (1897). *C. caudata*, Scribn. Rep. Mo. Bot. Gard. x. 52 (1899). *C. setosa* & *C. caudata*, Scribn. & Merrill, U. S. Div. Agros. Bull. xxi. 38, 39, f. 23, 24. *Panicum caudatum*, Lam. Ill. i. 171 (1791). *P. setosum*, Sw. Prodr. 22 (1788). — GALAPAGOS IDS.: Douglas (hb. Gr.). ALBEMARLE ISL.: *Macrae?* Iguana Cove, growing 4.5 to 6 dm. high and woody at base, very common under *Opuntia* thickets, Snodgrass & Heller, no. 35 (hb. Gr.); common everywhere from beach to 600 m. altitude, the most abundant grass, Snodgrass & Heller, no. 111 (hb. Gr.); north mountain, Elizabeth Cove, Snodgrass & Heller, no. 285 (hb. Gr.); Tagus Cove, Snodgrass & Heller, no. 205 (hb. Gr.). BARRINGTON ISL.: Snodgrass & Heller, no. 470 (hb. Gr.). CHATHAM ISL.: Andersson (hb. Gr.); southwest end, lower region, Baur, no. 321 (hb. Gr.); Snodgrass & Heller, no. 553 (hb. Gr.). DUNCAN ISL.: Snodgrass & Heller, no. 692 (hb. Gr.). HOOD ISL.: Snodgrass & Heller, no. 718 (hb. Gr.). JAMES ISL.: James Bay, Snodgrass & Heller, no. 394 (hb. Gr.). NARBOROUGH ISL.: Snodgrass & Heller, no. 349 (hb. Gr.). Further distrib. trop. regions.

S. n. sp.? Hook. f. (3), 172; Anderss. (1), 139, & (2), 47. — ALBEMARLE ISL.: *Macrae*. Not seen by the writer. Endemic so far as known.

#### SPOROBOLUS, R. Br.

S. DOMINGENSIS, Kunth, Enum. i. 214 (1833). — ABINGDON ISL.: Snodgrass & Heller, no. 811 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, Snodgrass & Heller, nos. 140 (hb. Gr.), 862 (hb. Gr.). HOOD ISL.: Snodgrass & Heller, no. 717 (hb. Gr.). Further distrib. Mex., W. Ind.

S. INDICUS, R. Br. Prodr. i. 170 (1810); Kunth, Enum. i. 211; Anderss. (1), 146, & (2), 50; Caruel (1), 621; Vasey, U. S. Dept. Agric. Div. Bot. Bull. iii. 21, t. 7 (1887). *S. tenacissimus*, Beauv. Agrost. 26 (1812). — CHARLES ISL.: in upper grassy places, Andersson (hb. Gr.). CHATHAM ISL.: *Chierchia*. Further distrib. U. S., Mex., S. Am., W. Ind., Old World.

S. VIRGINICUS, Kunth, Rev. Gram. i. 67 (1829), & Enum. i. 210; Anderss. (1), 146, & (2), 51. *Agrostis virginica*, L. Sp. 63 (1753). *Distichlis* sp. Rose (1), 138. — ALBEMARLE ISL.: Elizabeth Cove, Snodgrass & Heller, no. 271 (hb. Gr.); Tagus Cove, Snodgrass & Heller, nos. 151 (hb. Gr.), 210 (hb. Gr.). CHATHAM ISL.: on banks near salt water, Andersson (hb. Gr.); A. Agassiz (hb. Gr.); Snodgrass

& Heller, no. 549 (hb. Gr.). Further distrib. U. S., Mex., W. Ind., S. Am. Andersson notes two vegetative forms: *obesa* and *elata*.

#### STENOTAPHRUM, Trin.

S. GLABRUM, Trin. Fund. Agrost. 176 ("1820"). *S. americanum*, Schrank, Pl. Rar. Hort. Monac. t. 98 ("1819"); Rob. & Greenm. (1), 149. — ALBEMARLE ISL.: Iguana Cove, Snodgrass & Heller, nos. 57 (hb. Gr.), 873 (hb. Gr.). CHATHAM ISL.: southwest end, middle region, Baur, no. 325 (hb. Gr.). Further distrib. tropical shores of both continents.

#### STIPA, L.

S. ROSTRATA, Anderss. (1), 142, & (2), 48. — CHATHAM ISL.: Andersson (hb. Gr.). Habit of *Aristida subspicata*, but differing rather conspicuously in its untwisted awns. Endemic.

### CYPERACEAE.

#### CYPERUS, L.

C. ARISTATUS, Rottb. Descr. Nov. Pl. 23, t. 6, f. 1 (1786); C. B. Clarke, Jour. Linn. Soc. xxi. 91. *C. inflexus*, Muhl. Descr. Gram. 16 (1817); Hook. f. (3), 177; Anderss. (1), 153, & (2), 54. — ALBEMARLE ISL.: Macrae (var.  $\gamma$  *elongatus*, Hook. f., l. c. 178); Tagus Cove, Snodgrass & Heller, no. 173 (hb. Gr.). CHARLES ISL.: Darwin (var.  $\beta$  *acaulis*, Hook. f., l. c.). CHATHAM ISL.: A. Agassiz (hb. U. S. Nat. Mus.). JAMES ISL.: Scouler. NARBOROUGH ISL.: south, 615 m. altitude, Snodgrass & Heller, no. 345 (hb. Gr.). Further distrib. N. Am., Mex., W. Ind., S. Am., Old World.

C. BRACHYSTACHYS, Anderss. (2), 53, t. 13, f. 2; Rob. & Greenm. (1), 148, where by typographical error ascribed to Charles Island. *Mariscus brachystachys*, Hook. f. (3), 179; Anderss. (1), 152. — ABINGDON ISL.: Snodgrass & Heller, no. 832 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, Snodgrass & Heller, no. 39 (hb. Gr.); southern portion, Baur, no. 313 (hb. Gr.). CHARLES ISL.: Darwin; Andersson. CHATHAM ISL.: southwest end, middle region, Baur, no. 312 (hb. Gr.). JAMES ISL.: Scouler. TOWER ISL.: Snodgrass & Heller, no. 791 (hb. Gr.). Endemic. This species is known to me only from the descriptions of Hooker and Andersson, which do not altogether agree, and from Andersson's figure, which is not very satisfactory. The specimens of recent collections mentioned above are referred here with doubt.

Snodgrass & Heller's no. 132 (hb. Gr.) from Iguana Cove, Albemarle Isl., with irregular unequal rayed umbels and remarkably slender spikes, has closely similar floral structure and is probably an extreme form of this species.

*C. CONFERTUS*, Sw. Prodr. 20 (1788), & Fl. Ind. Occ. i. 115; Anderss. (2), 54; Rose (1), 138. *C. biuncialis*, Anderss. (1), 156, & (2), 56. *C. dissitiflorus*, Anderss. (1), 153, & (2), 54.—ALBEMARLE ISL.: Andersson (hb. Gr.); Iguana Cove, Snodgrass & Heller, no. 907 (hb. Gr.). BINDLOE ISL.: Snodgrass & Heller, no. 784 (hb. Gr.). CHARLES ISL.: Andersson (hb. Gr.); A. Agassiz (hb. Gr.); Snodgrass & Heller, nos. 403 (hb. Gr.), 458 (hb. Gr.). CHATHAM ISL.: Andersson; A. Agassiz; Snodgrass & Heller, no. 500 (hb. Gr.). DUNCAN ISL.: Snodgrass & Heller, no. 684 (hb. Gr.). HOOD ISL.: Snodgrass & Heller, no. 742 (hb. Gr.) INDEFATIGABLE ISL.: Andersson. JAMES ISL.: Andersson. Further distrib. trop. Am.

*C. ESCULENTUS*, L. Sp. 45 (1753); Kunth, Enum. ii. 61; Anderss. (1), 153, & (2), 54. *C. strigosus*, Anderss. ll. cc., at least in part? not L.—ALBEMARLE ISL.: Tagus Cove, in damp soil of cañons, Snodgrass & Heller, no. 179 (hb. Gr.). CHATHAM ISL.: in grassy places, Andersson (hb. Gr.). Further distrib. general.

*C. FUGAX*, Liebm. Mex. Halv. 8 (1850), & Vidensk Selsk. Skr. ser. 5, ii. 196 (1851); Rob. & Greenm. (1), 148.—CHATHAM ISL.: southwest end, middle region, Baur, no. 311 (hb. Gr.). Further distrib. Mex. A species referred by Hook. f. & Jacks. Ind. Kew. i. 693 to *Pycneus polystachyus*.

*C. GALAPAGENSIS*, Caruel (1), 621.—CHATHAM ISL.: *Chierchia*. Endemic.

*C. GRANDIFOLIUS*, Anderss. (1), 157, & (2), 56.—CHATHAM ISL.: in ditches filled with water in the interior part of the island, Andersson. Endemic.

*C. LAEVIATUS*, L. Mant. ii. 179 (1771).—ALBEMARLE ISL.: Elizabeth Cove, Snodgrass & Heller, no. 260 (hb. Gr.). Further distrib. cosmop. trop.

*C. LIGULARIS*, L. Amoen. Acad. v. 391 (1760). *Mariscus rufus*, HBK. Nov. Gen. & Sp. i. 216, t. 67 (1815).—ALBEMARLE ISL.: Elizabeth Cove, Snodgrass & Heller, nos. 263 (hb. Gr.), 264 (hb. Gr.); Iguana Cove, Snodgrass & Heller, no. 861 (hb. Gr.); Tagus Cove, Snodgrass & Heller, no. 191 (hb. Gr.). Further distrib. W. Ind., trop. S. Am., trop. Africa.

*C. MUTISII*, Anderss. (2), 53; in two forms; Rob. & Greenm. (1), 148 (var. *plenus*). *Mariscus Mutisii*, HBK. Nov. Gen. & Sp. i. 216, t. 66 (1815); Kunth, Enum. ii. 124; Hook. f. (1), 178; Anderss. (1), 151. — ALBEMARLE ISL.: *Macrae*; Elizabeth Cove, *Snodgrass & Heller*, no. 262 immature and doubtful (hb. Gr.); Tagus Cove, abundant wherever a little soil occurs in cañons, lava fields, or on hillsides, *Snodgrass & Heller*, nos. 894 (hb. Gr.), 190 also immature and doubtful (hb. Gr.). CHARLES ISL.: *Andersson* (hb. Gr.). CHATHAM ISL.: dry places, middle region, *Andersson*; *Baur*. GARDNER ISL.: *Snodgrass & Heller*, no. 647 (hb. Gr.). NARBOROUGH ISL.: Mangrove Point, lava rock near beach and also inland, *Snodgrass & Heller*, nos. 310 (hb. Gr.), 311 (hb. Gr.); southern part, 615 m. altitude, abundant in heavy soil, *Snodgrass & Heller*, no. 334, a slender and doubtful form (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 602 (hb. Gr.).

*C. ROTUNDUS*, Hook. f. (3), 177; Anderss. (1), 153, & (2), 54; not L? — ALBEMARLE ISL.: *Macrae*, ex Hook. f., l. c. According to Hook. f. & Jacks. Ind. Kew. i. 698, the plant of *Macrae* was the Texan *C. lutescens*, Torr. & Hook., but acc. to Dr. N. L. Britton, who has examined the type of the latter, the Texan plant was only a form or variety of *C. esculentus*, L.

*C. RUBIGINOSUS*, Hook. f. (3), 178; Anderss. (1), 157, & (2), 56; Rob. & Greenm. (1), 148, as to pl. from Duncan Isl. — *Spiculis oblongis*, 6–10 mm. longis; *squamulis* 10–19. — GALAPAGOS IDS.: *Goodridge*, in part (hb. Gr.). CHARLES ISL.: *Darwin*. CHATHAM ISL.: *Snodgrass & Heller*, no. 501 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 318 (hb. Gr.). Endemic.

Var. *cornutus*, *spiculis perbrevibus valde congestis*; *squamulis* 4–8. — *Mariscus cornutus*, Anderss. (1), 151. *Cyperus cornutus*, Anderss. (2), 53, t. 13, f. 1. *C. rubiginosus*, Rob. & Greenm. (1), 148, as to pl. from Chatham and Hood Ids. — GALAPAGOS IDS.: *Goodridge*, in part (hb. Gr.). CHARLES ISL.: *Andersson* (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); southwest end, middle region, *Baur*, no. 315 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 683 (hb. Gr.). HOOD ISL.: *Baur*, no. 314 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 595 (hb. Gr.). Endemic.

*C. STRIGOSUS*, L. Sp. 47 (1753); Hook. f. (3), 177; Anderss. (1), 153, & (2), 54? — CHARLES ISL.: *Darwin*. CHATHAM ISL.: *Andersson*. Further distrib. N. Am. I have seen no Galapageian specimens



of this species, and am inclined to believe that the plants so referred by Hooker and Andersson will prove to be forms rather of *C. esculentus*.

*C. SURANIMENSIS*, Rottb. Descr. Nov. Pl. 35, t. 6, f. 5 (1786); Kunth, Enum. ii. 43; Hook. f. (3), 177; Anderss. (1), 153, & (2), 54. — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Further distrib. trop. S. Am., Mex., W. Ind., S. United States.

*C. TRISTACHYUS*, Boeck. Linnaea, xxxv. 454 (1867-1868); Rob. & Greenm. (1), 148. — CHATHAM ISL.: southwest end, middle region, *Baur*, no. 316 (hb. Gr.). Further distrib. Venezuela, Colombia, southern central Mexico.

*C. sp.* — NARBOROUGH ISL.: southern part, altitude 615 m., *Snodgrass & Heller*, no. 337 (hb. Gr.).

*C. sp.* WENMAN ISL.: dried stalks of a *Cyperus* are mentioned in Mr. Heller's field notes, as observed on a small islet near Wenman.

#### DICHRONEMA, Michx.

*D. LEUCOCEPHALA*, Michx. Fl. i. 37 (1803); Rob. & Greenm. (1), 148. — CHATHAM ISL.: southwest end, middle region, *Baur*, no. 353 (hb. Gr.). Further distrib., S. United States, Mex., W. Ind.

#### ELEOCHARIS, R. Br.

*E. FISTULOSA*, Schult. Mant. ii. 89 (1824); Caruel (1), 622. — CHATHAM ISL.: *Chierchia*, acc. to Caruel. Further distrib. trop. of the Old World. I cannot help a strong suspicion that this when reexamined will prove to be the following species.

*E. MUTATA*, R. Br. Prodr. 224 (1810). *Scirpus mutatus*, L. Syst. Nat. ed. 10, 867 (1760). — ALBEMARLE ISL.: Elizabeth Bay, *Snodgrass & Heller*, no. 261 (hb. Gr.). Further distrib. S. Am., W. Ind.

#### FIMBRISTYLIS, Vahl.

*F. CAPILLARIS*, Gray, Man. Bot. ed. 5, 567 (1869). *Scirpus capillaris*, L. Sp. 49 (1753). — BINDLOE ISL.: *Snodgrass & Heller*, no. 790 a (hb. Gr.). NARBOROUGH ISL.: Mangrove Point, near beach in crevices of lava, abundant, *Snodgrass & Heller*, no. 304 (hb. Gr.). Further distrib. N. Am., Mex., W. Ind., southward to Uruguay.

*F. DIPHYLLA*, Vahl, Enum. ii. 289 (1805). — HOOD ISL.: *Snodgrass & Heller*, no. 730 (hb. Gr.). Widely distrib. in trop. regions.

## HEMICARPHA, Nees.

*H. SUBSQUARROSA*, Nees in Mart. Fl. Bras. ii. pt. 1, 61 (1842); Rob. & Greenm. (1), 148. *H. micrantha*, Britton, Bull. Torr. Club, xv. 104 (1888); Coville, *ibid.* xxi. 34. *Scirpus micranthus*, Vahl, Enum. ii. 254 (1805). — CHATHAM ISL.: southwest end, middle region, *Baur*, no. 317 (hb. Gr.). Further distrib. U. S., Mex., W. Ind., S. Am.

## KYLINGIA, Rottb.

*K. PUMILA*, Michx. Fl. i. 28 (1803), as *Kyllingia*. *K. caespitosa*, Nees in Mart. Fl. Bras. ii. pt. 1, 12 (excl. syn. Kunth); Rob. & Greenm. (1), 148, as *Kyllingia*. — CHARLES ISL.: *Baur*, no. 319 (hb. Gr.). Further distrib. U. S., W. Ind., Mex., S. Am.

## SCLERIA, Berg.

*S. PRATENSIS*, Lindl. ex Nees, Nov. Act. Nat. Cur. xix. Suppl. i. 121 (1843); Rob. & Greenm. (1), 148. — CHATHAM ISL.: southwest end, upper region, *Baur*, no. 320 (hb. Gr.). Further distrib. Mex., W. Ind., S. Am.

## LEMNACEAE.

## LEMNA, L.

*L. sp.*, Wolf (1), 284. — CHARLES ISL.: in brook near hacienda, acc. to Wolf, l. c.

## BROMELIACEAE.

## TILLANDSIA, L.

*T. INSULARIS*, Mez in DC. Monogr. ix. 756 (1896). *T. sp.* Rob. & Greenm. (1), 148. — GALAPAGOS IDS.: *Steindachner*, no. 28 (in hb. Naturh. Mus. Vienna). DUNCAN ISL.: *Baur*, no. 237 (hb. Gr.). Endemic. A *Tillandsia* sp. coll. on the Galapagos Ids. by Habel, may prove the same.

## COMMELINACEAE.

## COMMELINA, Plum.

*C. NUDIFLORA*, L. Sp. 41 (1753). *C. agraria*, Kunth, Enum. iv. 38 (1843); Hook. f. (3), 179; Anderss. (1), 158, & (2), 56; Rob. & Greenm. (1), 148. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 56 (hb. Gr.), 103 (hb. Gr.). CHARLES ISL.: *Darwin*. DUNCAN ISL.: *Baur*, no. 238 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. general in the tropics.

COMMELINACEA? Caruel (1), 621. — CHARLES ISL.: *Chierchia*. Same as the preceding?

## AMARYLLIDACEAE.

## HYPOXIS, L.

*H. DECUMBENS*, L. Amoen. Acad. v. 396 (1759), & Syst. Nat. ed. 10, 986; Baker, Jour. Linn. Soc. xvii. 107. *H. erecta*, Hook. f. (3), 180; Anderss. (1), 158, & (2), 57; Rob. & Greenm. (1), 148, not L. — CHARLES ISL.: *Darwin*. CHATHAM ISL.: southwest end, upper region, *Baur*, no. 239 (hb. Gr.). Further distrib. Mex., W. Ind., trop. of S. Am.

## ORCHIDACEAE.

## EPIDENDRUM, L.

*E. SPICATUM*, Hook. f. (3), 180; Anderss. (1), 158, & (2), 57. — CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.), fruiting specimen, the identity not quite certain. JAMES ISL.: *Darwin*. Endemic.

## PIPERACEAE.

## PEPEROMIA, R. &amp; P.

*P. FLAGELLIFORMIS*, Hook. f. ex. Miq. in Hook. Lond. Jour. Bot. iv. 423 (1845), & (3), 181; Anderss. (1), 158, & (2), 57. — JAMES ISL.: *Darwin*. Endemic.

*P. GALAPAGENSIS*, Hook. f. ex. Miq. in Hook. Lond. Jour. Bot. iv. 426 (1845), & (3), 180; Anderss. (1), 158, & (2), 57. — JAMES ISL.: *Darwin*. Endemic.

*P. GALIOIDES*, HBK. Nov. Gen. & Sp. i. 71, t. 17 (1815). — ABINGDON ISL.: alt. 510 m., *Snodgrass & Heller*, no. 837 (hb. Gr.). Determined by Mr. Casimir de Caudolle. Further distrib. Mex., trop. S. Am.

*P. PETIOLATA*, Hook. f. (3), 181; Anderss. (1), 158, & (2), 57. — JAMES ISL.: *Darwin*. Endemic.

*P. RAMULOSA*, Anderss. (1), 158, & (2), 57. — CHARLES ISL.: on tree trunks at the summit of the mountain, *Andersson*. Endemic.

*P. Snodgrassii*, C. DC. nov. sp., "foliis ternis-quaternis brevissime petiolatis a basi acuta ellipticis apice obtusis vel oblongo-obovatis utrinque dense pilosulis, amentis apice ramulorum verticillatis pedunculatis ipsis folia fere aequantibus, bractea orbiculari centro subsessili, ovario emerso ovato paullo sub apice stigmatifero, stigmate minuto et

glabro. — *Herbula ramulis ad 3 cm. longis et circa 1 mm. crassis, dense pilosulis. Foliorum limbi in sicco membranacei ad 7 mm. longi et ad 3½ mm. lati. Amenta confertiflora in sicco rufescentia pedunculis 3 mm. longis, rhachis glabra. Ovarium sessile.* — ALBEMARLE ISL.: Iguana Cove, on trees and bushes, *Snodgrass & Heller*, no. 130 (hb. Gr. and hb. C. DC.). Endemic.

P. nov. sp. — ALBEMARLE ISL.: mountain east of Tagus Cove, alt. 925 m., *Snodgrass & Heller*, no. 232 (hb. Gr.). Determined by Mr. Casimir de Candolle. Endemic.

P. sp. Rob. & Greenm. (1), 148. — CHATHAM ISL.: *Baur*. (Specimen not in hb. Gr. but sent as unicate to hb. Clark Univ.).

## URTICACEAE.

### FLEURYA, Gaud.

F. AESTUANS, Gaud. in Freyc. Voy. Bot. 497 (1826): Anderss. (2), 58. *F. aestuans*, var. *tuberculata* (poorly marked), Wedd. in DC. Prodr. xvi. pt. 1, 72 (1869); Rob. & Greenm. (1), 148. *F. cordata*, Gaud. l. c. 498, & Bot. Bonite, t. 83; Wedd. Arch. Mus. ix. 110; Anderss. (2), 57. ? *Urtica canadensis*, Hook. f. (3), 182; Anderss. (1), 160; not L. *U. divaricata*, Hook. f. (3), 181; Anderss. (1), 159; not L. *U. latifolia*, & *tuberculata*, Anderss. (1), 159, & (2), 57, 58. *U. racemosa*, Anderss. (2), 57. ? *Laportea canadensis*, Anderss. (2), 58, not Gaud. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 55 (hb. Gr.), 100 (hb. Gr.); southern portion, *Baur*, no. 240 (hb. Gr.); Tagus Cove, tolerably common in shady places from the beach to 300 m. alt., *Snodgrass & Heller*, no. 186 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson* (hb. Gr.). CHATHAM ISL.: *Snodgrass & Heller*, no. 525 (hb. Gr.). JAMES ISL.: *Darwin*, acc. to Anderss. l. c. under *Laportea canadensis*, but not mentioned by Hooker f.; James Bay, abundant in lava soil under bushes, *Snodgrass & Heller*, no. 375 (hb. Gr.). NARBOROUGH ISL.: southern portion, *Snodgrass & Heller*, no. 339 (hb. Gr.). Further distrib. trop. S. Am.

### PARIETARIA, L.

P. DEBILIS, G. Forst. Fl. Ins. Aust. Prodr. 73 (1786). *P. floridana*, Hook. f. (3), 182 (see Wedd. Arch. Mus. ix. 516); Anderss. (1), 160, & (2), 58. — CHARLES ISL.: *Darwin*. JAMES ISL.: *Darwin*. Further distrib. trop. Am., Asia, Pacific Ids.

## PILEA, Lindl.

*P. Baurii*, nov. sp., annua erecta debilis; caule glaberrimo rufo-brunneo parce ramoso; foliis oppositis graciliter petiolatis ovatis 3-nervis acutis basi obtusis vel rotundatis obtuse serratis tenuibus supra viridibus obscure adpresso-pubescentibus nervis leviter impressis subtus paullo pallidioribus pubescentibus nervis plus minusve prominentibus; stipulis late ovatis apice rotundatis strigosis; cymis masculis oppositis axillaribus compositis quam petiolum multo brevioribus leviter recurvatis, foeminis ignotis. — *P. sp.* Rob. & Greenm. (1), 148. — CHARLES ISL.: June, 1891, *Baur*, no. 241 (hb. Gr.). CHATHAM ISL.: southwest end, middle region, June, 1891, *Baur*, no. 242 (hb. Gr.). Endemic. Leaves 1.7 to 4 cm. long, three-fourths as broad; petioles 1.3 to 1.8 cm. long; staminate cymes 8 to 11 mm. long. A species with the habit and foliage much as in *P. pubescens*, Poir., but the inflorescence of *P. peploides*, HBK. PLATE 2, FIG. 1.

*P. MUSCOSA*, Lindl. Coll. Bot. t. 4; Wedd. Arch. Mus. ix. 174. *P. succulenta*, Hook. f. (3), 182; Anderss. (1), 160, & (2), 58; not Wedd. (see Hook. f. & Jacks. Ind. Kew. i. 524). *Parietaria microphylla*, L. Syst. Nat. ed. 10, 1308 (1760). — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Further distrib. trop. S. Am., Mex., W. Ind.

*P. PEPLOIDES*, Hook. & Arn. Bot. Beech. 96 (1832); Hook. f. (3), 182; Wedd. Arch. Mus. ix. 179; Anderss. (1), 160, & (2), 58. *Dubreulia peploides*, Gaud. in Freyc. Voy. Bot. 495 (1826). — JAMES ISL.: *Darwin*. Further distrib. Pacific Ids., Asia.

## LORANTHACEAE.

## PHORADENDRON, Nutt.

*P. florianum*. *Viscum florianum*, Anderss. (1), 219, & (2), 92. — CHARLES ISL.: in middle region, *Andersson*. Endemic.

*P. galapageium*. *Viscum galapageium*, Hook. f. (3), 216; *V. galapagejum*, Anderss. (1), 220, & (2), 92. — GALAPAGOS IDS.: *Habel*. CHATHAM ISL.: *Darwin*; *Andersson*. Endemic.

*P. Henslovii*. *Viscum Henslovii*, Hook. f. (3), 216; Anderss. (1), 219, & (2), 92; Rob. & Greenm. (1), 148. — ABINGDON ISL.: *Snodgrass & Heller*, no. 825 (hb. Gr.). ALBEMARLE ISL.: *Ignana Cove*, *Snodgrass & Heller*, no. 40 (hb. Gr.); mountain east of *Tagus Cove*, *Snodgrass & Heller*, no. 228 (hb. Gr.). CHARLES ISL.: *Darwin*.

CHATHAM ISL.: southwest end, upper region, *Baur*, no. 286 (hb. Gr.). Endemic.

*P. uncinatum*, nov. sp., glabrum lignoso-carnosum; caulibus teretibus olivaceo-viridibus dichotomo ramosis; ramis arcuatis etiam teretibus gracilibus; internodiis elongatis; foliis oppositis breviter petiolatis lanceolatis vel ovati-lanceolatis integris 5-nervatis margine ad apicem falcato-uncinatum revoluta basi cuneata; spicis in dichotomis terminalibus elongatis saepius 7-nodosis; floribus 4-seriatim immersis; calycis segmentis late deltoideis obtusis. — NARBOROUGH ISL.: southern part, common on "palo santo" and coffee trees, at 300 to 600 m. alt., April, 1899, *Snodgrass & Heller*, no. 325 (hb. Gr.). Endemic. Leaves 7 cm. long, 1.6 to 2.3 cm. broad. Spikes 7 cm. long, segments 1.5 cm. long; sheath short, sharply 2-pointed. PLATE 1, FIG. 1.

## POLYGONACEAE.

### POLYGONUM, L.

*P. acuminatum*, HBK. Nov. Gen. & Spec. ii. 178 (1817); Meisn. in Mart. Fl. Bras. v. pt. 1, 14, t. 4, & in DC. Prodr. xiv. 114; Griseb. Fl. Brit. W. Ind. 161; Small, Monog. Gen. Polyg. 52, t. 13. — GALAPAGOS IDS.: acc. to Griseb. l. c. Further distrib. trop. S. Am., Centr. Am., W. Ind.

*P. GALAPAGENSE*, Caruel (1), 624. — CHATHAM ISL.: *Chierchia* (hb. Kew.). Endemic.

## CHENOPODIACEAE.

### ATRIPLEX, L.

*A. sp.* — INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 676 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 571 (hb. Gr.).

*A. sp.* — WENMAN ISL.: *Snodgrass & Heller*, no. 9 (hb. Gr.).

## AMARANTACEAE.

### ALTERNANTHERA, Forsk.

*A. RADICATA*, Hook. f. (4), 261, 262; Anderss. (1), 164, & (2), 60, t. 3, f. 2. — *A. acaulis*, Anderss. (1), 164. — CHATHAM ISL.: *Darwin*; in upper very dry region, *Andersson* (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 753 (hb. Gr.). Endemic.



*A. RIGIDA*, Rob. & Greenm. (1), 143, 148. — JAMES ISL.: Orchilla Bay, *Baur*, no. 387 (hb. Gr.). Endemic.

*A. SUBSCAPOSA*, Hook. f. (3), 189; Moq.-Tand. in DC. Prodr. xiii. pt. 2, 353; Anderss. (1), 164 & (2), 60. — CHARLES ISL.: *Darwin*. Endemic.

#### AMARANTHUS, L.

*A. CARACASANUS*, HBK. Nov. Gen. & Sp. ii. 195 (1817); Hook. f. (3), 189; Anderss. (1), 161, & (2), 58; Rob. & Greenm. (1), 147. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 77 (hb. Gr.); on beach, not common, *Snodgrass & Heller*, no. 108 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 219 (hb. Gr.); southern portion, *Baur*, no. 287 (hb. Gr.). CHARLES ISL.: *Darwin*; in cultivated ground, *Andersson*; *Snodgrass & Heller*, no. 421 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.), but not recorded in his works; *Snodgrass & Heller*, no. 516 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*. Further distrib. S. Am.

*A. CELOSIODES*, HBK. Nov. Gen. & Sp. ii. 194 (1817); Moq.-Tand. in DC. Prodr. xiii. pt. 2, 257; Hook. f. (3), 189; Anderss. (1), 161, & (2), 59. — CHARLES ISL.: *Darwin*; *Andersson*. CHATHAM ISL.: *Andersson*. — Further distrib. northern S. Am. A very doubtful species in need of further study. I have seen none of the specimens upon which the records of its occurrence in the Galapagos Islands rests.

*A. SCLERANTOIDES*, Anderss. (2), 59, t. 2, f. 1; Rob. & Greenm. (1), 139, 147. *Euzolus sclerantoides*, Anderss. (1), 163. — GALAPAGOS IDS.: *Habel*. BARRINGTON ISL.: *Snodgrass & Heller*, no. 469 (hb. Gr.). CHARLES ISL.: in lower dry region, *Andersson*. NARBOROUGH ISL.: eastern part, *Snodgrass & Heller*, no. 354 (hb. Gr.). Endemic.

Forma CHATHAMENSIS, Rob. & Greenm. (1), 140. — CHATHAM ISL.: southwest end, lower region, *Baur*, no. 289 (hb. Gr.). Endemic.

Forma HOODENSIS, Rob. & Greenm. l. c. — GARDNER ISL.: *Snodgrass & Heller*, no. 635 (hb. Gr.). HOOD ISL.: *Baur*, no. 288 (hb. Gr.), *Snodgrass & Heller*, no. 731 (hb. Gr.). Endemic.

*A. SPINOSUS*, L. Sp. 991 (1753); Anderss. (1), 161, & (2), 59. — CHARLES ISL.: cultivated ground of lower region, *Andersson*. Doubtless an introduction, not seen since on the islands. Further distrib. general in warm and temperate countries.

*A. SQUARRULOSUS*, Uline & Bray, Bot. Gaz. xix. 270 (1894); Rob. & Greenm. (1), 147. *Amblogyne squarrulosa*, Gray, Proc. Am. Acad. v. 169 (1861). *Scleropus squarrulosus*, Anderss. ined. ex Gray, l. c.,

and Uline & Bray, l. c. *S. squamulatus*, Anderss. (1), 162, & (2), 60. — ALBEMARLE ISL.: quite common near beach, Tagus Cove, *Snodgrass & Heller*, no. 183 (hb. Gr.). CHARLES ISL.: *Snodgrass & Heller*, no. 422 (hb. Gr.). CHATHAM ISL.: in grassy places at low altitude, *Andersson* (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 691 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 663 (hb. Gr.). JERVIS ISL.: *Baur*, no. 390 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 570 (hb. Gr.). Endemic. Unfortunately Dr. Gray misread *Andersson's* label and altered the specific name.

A. URCEOLATUS, Benth. Bot. Sulph. 158 (1844); Uline & Bray, Bot. Gaz. xix. 269. *Sarratia urceolata*, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 269 (1849). *Scleropus urceolatus*, Anderss. (1), 162. *Amblogyna urceolata*, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 270; Anderss. (2), 59, t. 2, f. 2; Gray, Proc. Am. Acad. v. 168 (1861), as *Amblogyne*. — INDEFATIGABLE ISL.: grassy places at low altitude, *Andersson*. Further distrib. adj. S. Am., from Peru northward. Lower Calif.

A. VIRIDIS, L. Sp. ed. 2, 1405 (1763); Uline & Bray, Bot. Gaz. xix. 319. — BARRINGTON ISL.: *Snodgrass & Heller*, 481 (hb. Gr.). CHATHAM ISL.: *Snodgrass & Heller*, no. 529 (hb. Gr.). Probably of recent introduction. Further distrib. general in warm countries.

#### FROELICHIA, Moench.

F. JUNCEA, Rob. & Greenm. (1), 143, 148. — ALBEMARLE ISL.: mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 290 (hb. Gr.); southern portion, *Baur*, no. 388 (hb. Gr.); mountain east of Tagus Cove, alt. 925 m., *Snodgrass & Heller*, no. 243 (hb. Gr.). Endemic.

F. LANIGERA, Anderss. (2), 63. *F. lanata*, Anderss. (2), t. 3, f. 1. — ALBEMARLE ISL.: *Andersson*; Tagus Cove, *Snodgrass & Heller*, no. 895 (hb. Gr.). Endemic.

F. NUDICAULIS, Hook. f. (3), 192; Moq.-Tand. in DC. Prodr. xiii. pt. 2, 423; Anderss. (1), 170, & (2), 63, t. 4, f. 3. — CHARLES ISL.: *Darwin*; *Andersson* (hb. Gr.). CHATHAM ISL.: *Andersson*. Endemic.

F. scoparia, nov. sp. *F. lanigeræ* valde affinis; caulibus decumbentibus basi plus minusve lignosis ramosissimis subteretibus glabratibus cortice lutescente tectis; ramis ramulisque erectis teretibus gracilibus sparse adpresso-lanatis, internodiis elongatis quam folii lineares acuti patentes sparse adpresso-lanati multo longioribus; pedunculis terminalibus nudis elongatis; capitulis terminalibus paucifloris subglobosis verticillastro

uno paullo inferiori vel evoluto vel nullo; bracteis ovatis glabriusculis brevibus obtusis; perigonio ovoideo-conico; laciniis ovatis obtusis stramineis basi lanatis supra glabratissimis induratis. — NARBOROUGH ISL.: southern part, abundant at 600 m. alt., *Snodgrass & Heller*, March, 1899, no. 346 (hb. Gr.), and April, 1899, no. 322 (hb. Gr.). This species may prove a variety of *F. lanigera*, Anderss., with which it shares many characteristics. It is, however, taller, considerably more slender and less lanate. The leaves are longer, narrower, and more acute, and the heads smaller and in general fewer-flowered.

#### IRESENE, L.

I. EDMONSTONEI, Hook. f. (3), 190; Moq.-Tand. in DC. Prodr. xiii. pt. 2, 343; Anderss. (1), 164, & (2), 60. — CHARLES ISL.: *Darwin*. Endemic? A plant in herb. Gray, labelled "*Iresine Edmonstonei*, Hook. f. Guayaquil? Mr. Edmonston," answers well to the description of this species.

#### PLEUROPETALUM, Hook. f.

P. DARWINII, Hook. f. (1), t. 2, (3), 221, & Bot. Mag. cix. under t. 6674, where second species is figured and genus is referred as by Endlicher and by Moquin to *Amarantaceae*; Anderss. (1), 225, & (2), 96. *Allochlamys Darwinii*, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 463. — ALBEMARLE ISL.: Iguana Cove near beach, *Snodgrass & Heller*, no. 646 (hb. Gr.). JAMES ISL.: *Darwin*. Endemic. The single specimen of this problematic plant secured by Messrs. Snodgrass & Heller is rather fragmentary but corresponds closely with the characterization and figure (*Journ. of Bot.*) published by Hooker. In its dense (although fruiting) inflorescence, relatively small leaves, 4 to 5 carpels and 6 to 8 stamens, it would seem sufficiently distinct from *P. costaricense* [H. Wendl.] Hemsl. Biol. Cent.-Am. Bot. iii. 12, figured by Hook. f. Bot. Mag. 6674. The congeneric *Melanocarpum Sprucei*, Hook. f. Gen. Pl. iii. 24 of Ecuador is said to have 2 to 3 carpels and 5 stamens.

#### TELANTHERA, R. Br.

T. ECHINOCEPHALA, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 373 (1849); Anderss. (1), 167, & (2), 62; Rose (1), 137; Rob. & Greenm. (1), 148. *T. argentea*, Anderss. (1), 168. *T. sp.* Rose (1), 137. *Brandesia echinocephala*, Hook. f. (3), 189. — GALAPAGOS IDS.: *Habel*. ARINGDON ISL.: *Baur*, no. 299 (hb. Gr.); *Snodgrass & Heller*, no. 850 (hb. Gr.). ALBEMARLE ISL.: southern portion, *Baur*,

no. 300 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 31 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 467 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *A. Agassiz*; *Snodgrass & Heller*, no. 414 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *A. Agassiz* (hb. U. S. Nat. Mus.); southwest end, lower region, *Baur*, no. 301 (hb. Gr.); *Snodgrass & Heller*, no. 497 (hb. Gr.). DUNCAN ISL.: *A. Agassiz* (hb. Gr. & hb. U. S. Nat. Mus.); *Baur*, no. 298 (hb. Gr.); *Snodgrass & Heller*, no. 711 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 624 (hb. Gr.). HOOD ISL.: *Baur*, no. 297 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; northern part, *Snodgrass & Heller*, no. 680 (hb. Gr.). JAMES ISL.: *Andersson*; James Bay, *Baur*, no. 296 (hb. Gr.); abundant, shrubby, spreading, 1 to 1.3 m. high, *Snodgrass & Heller*, no. 360 (hb. Gr.). Endemic. With the far more copious material now at hand I have been unable to follow the formal subdivision of this species suggested by *Andersson* or to correlate the trifling variations with occurrence upon the different islands.

*T. FILIFOLIA*, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 368 (1849); *Anderss.* (1), 165, & (2), 61. *Bucholtzia filifolia*, Hook. f. (3), 192. — JAMES ISL.: *Scouler*. Endemic.

*T. FLAVICOMA*, *Anderss.* (1), 166, & (2), 61, t. 5, f. 2; *Rob. & Greenm.* (1), 148, in part (as to pl. Hood Isl.). — ABINGDON ISL.: *Snodgrass & Heller*, no. 826 (hb. Gr.), identity doubtful. CHARLES ISL.: in dry grassy places at middle altitudes, *Andersson*. GARDNER ISL.: *Snodgrass & Heller*, no. 617 (hb. Gr.). HOOD ISL.: *Baur*, no. 291 (hb. Gr.); *Snodgrass & Heller*, no. 733 (hb. Gr.). Endemic.

*T. FRUTESCENS*, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 265 (1849) q. v. for synon.; *Caruel* (1), 625. *Illicebrum frutescens*, L'Her. Stirp. Nov. iv. 75, t. 37 (1785). *Alternanthera frutescens*, R. Br. acc. to Spreng. Syst. i. 819 (1825), not *Rob. & Greenm.* (1), 148. — CHATHAM ISL.: *Chierchia*, acc. to *Caruel*, l. c. Further distrib. W. S. Am., Panama to Caracas and Chili.

*T. GLAUDESCENS*, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 369 (1849); *Anderss.* (1), 167, & (2), 62, t. 5, f. 3. *Bucholtzia glaucescens*, Hook. f. (3), 191. — CHARLES ISL.: in the middle region, *Andersson*. CHATHAM ISL.: *Darwin*; in grassy places and dry parts of the lower region, *Andersson* (hb. Gr.). Endemic.

*T. HELLERI*, nov. sp., stellato-tomentella grisea novellis subochraceis; ramis dichotomis teretibus gracilibus; internodiis quam folii multo longioribus; foliis late ovalibus vel orbicularibus apice rotundatis vel obtusis vel

in superioribus acutis, basi subtruncato, lamina 2-2.6 cm. longa 2.4-3 cm. lata penninervia, subtus haud vel paullo pallidiore; petiolo 3-4 mm. longo recurvato: capitulis in dichotomis sessilibus ovoideis 4-6 mm. longis 4 mm. crassis apice rotundatis ochraceo-pubescentibus; floribus arcte imbricatis obcompressis triquetris; squamis exterioribus tribus, quam interiores multo brevioribus lanceolatis vel ovato-lanceolatis acutis, in parte superiore ochraceo-pubescentibus, carina subrigida, marginibus tenuae membranaceis, squamis interioribus (sepalis) 3 ovato-lanceolatis acutis rigidioribus opacis 3.5 mm. longis; staminibus 5 glabris, filamentis gracillimis 1.7 mm. longis, antheris 1.3 mm. longis; staminodeis 5 tenuibus filamento subaequantibus, apice argute 2-3-partitis; ovario obovoideo, stylo breve crasso cum stigmate depresso-globoso. — CULPEPPER ISL.: 10 December, 1898, *Snodgrass & Heller*, no. 1 (hb. Gr.). A species to be readily distinguished from its Galapageian congeners by its broadly ovate or suborbicular stem-leaves. Endemic. PLATE 1, FIGS. 5, 6, and 7.

**Var. obtusior**, nov. var. Conspicue ochracea; foliis omnibus latissime oblongis vel ovato-oblongis obtusissimis. — WENMAN ISL.: 14 December, 1898, *Snodgrass & Heller*, no. 7 (hb. Gr.). Endemic. PLATE 1, FIG. 8.

**T. nudicaulis**, Moq.-Tand. in DC. Prodr. xiii. pt. 2, 369 (1849); Anderss. (1), 167, & (2), 62, t. 5, f. 1; Rob. & Greenm. (1), 148. *T. flavicoma*, Rob. & Greenm. (1), 148, in part (as to pl. Chatham Isl.). *Bucholtzia nudicaulis*, Hook. f. (3), 191. — GALAPAGOS IDS.: without further data (hb. Gr.). ALBEMARLE ISL.: eastern portion, Cowley Bay, *Baur*, no. 294 (hb. Gr.); southern part, *Baur*, no. 293 (hb. Gr.); on mountain east of Tagus Cove, alt. 925 m., *Snodgrass & Heller*, no. 249 (hb. Gr.). CHARLES ISL.: *Darwin*; in very dry places, *Andersson* (hb. Gr.). CHATHAM ISL.: northern part, *Baur*, no. 292 (hb. Gr.), leafless and doubtful. DUNCAN ISL.: *Snodgrass & Heller*, no. 710 (hb. Gr.). JAMES ISL.: Orchilla Bay, *Baur*, no. 295 (hb. Gr.). Further distrib. S. Chili, *J. G. Reynolds* (hb. Gr.)!

**T. rugulosa**, nov. sp., frutex arborescens; ramulis teretibus dichotomis griseis et breviter stellato-tomentellis mox glabrescentibus; foliis oppositis graciliter petiolatis oblongis penninerviis supra rugulosis tenuissime stellato-pubescentibus subtus multo pallidioribus canescentibus tomentellis basi cuneatis apice rotundatis vel obtusis apiculatisque; spicis in dichotomis sessilibus ovoideis vel breviter teretibus albidis; bracteis lanceolatis acutissimis apice plus minusve reflexis vel uncinatis; sepalis exterioribus lanceolatis hyalinis acutissimis glabris carina rigidiuscula; interioribus

ovati-lanceolatis basi atrobrunneis valde nervatis et inter nervis albobescentibus apice recto vel leviter recurvato; antheris linearibus staminodiis linearibus paullo indivisis superantibus. — *Alternanthera frutescens*, Rob. & Greenm. (1), 148, not R. Br. — CHATHAM ISL.: southwest end, middle region, June, 1891, *Baur*, no. 290 (hb. Gr.). Endemic. Leaf-blade 3 to 5 cm. long, 1.2 to 2 cm. broad; spikes 8 to 11 mm. long, 6 to 9 mm. in thickness. Nearly related to *T. frutescens*, Moq. in DC. Prodr. xiii. pt. 2, 365, but differing in the contour and rugosity of its leaves.

*T. Snodgrassii*, nov. sp., suffrutescens a basi valde ramosa; ramis oppositis vel alternis teretibus leviter striatis pallidis breviter adpresse et sordide pubescentibus vel novellis canescentibus tomentulosis ad nodos paullo incrassatis supra nodis non constrictis; foliis spatulatis adpresse pubescentibus erectis apice obtusis basi cuneatis sessilibus; spicis sessilibus ovoideis parvis albidis; bracteis late ovatis carinatis hyalinis acutis cuspidatis glabris adpressis apice rectis sepalis exterioribus bracteis similibus sub apice pubescentibus interioribus longioribus ovatis acutis basi atro-brunneis valde nervatis in parte superiore patente flavescentipilosis; filamentis filiformibus staminodiis oblongis apice laceratis. — SEYMOUR ISL.: north, May, 1899, *Snodgrass & Heller*, no. 578 (hb. Gr.). Endemic. Leaves 2.4 to 5 cm. long, 7 to 10 mm. broad; spikes 4 to 5 mm. in diameter. PLATE 2, FIG. 2.

*T. STRICTUSCULA*, Anderss. (1), 166. *T. angustata*, Anderss. (2), 61, t. 4, f. 2; Rob. & Greenm. (1), 148. *T. sp.* Rose, (1), 137. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 52 (hb. Gr.), 88 (hb. Gr.), 863 (hb. Gr.); southern portion, *Baur*, no. 302 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *A. Agassiz* (hb. Gr.); southwest end, lower region, *Baur*, no. 303 (hb. Gr.); *Snodgrass & Heller*, no. 502 (hb. Gr.). NARBOROUGH ISL.: southern part, not common, *Snodgrass & Heller*, no. 347 (hb. Gr.). Endemic. In his second publication Andersson credits this species to James Island, instead of Chatham Island as in his original description. A portion of the type material in hb. Gray is, however, labelled Chatham Island, where furthermore the species has been rediscovered by several subsequent collectors.

*T. VESTITA*, Anderss. (1), 169, & (2), 63, t. 4, f. 1; Rob. & Greenm. (1), 148. — INDEFATIGABLE ISL.: in dry grassy places of the middle region, *Andersson*; south of Conway Bay, *Baur*, no. 304 (hb. Gr.). Endemic



## BATIDACEAE.

## Batis, L.

*B. MARITIMA*, L. Syst. Nat. ed. 10, 1376 (1760). — JAMES ISL.: James Bay, near salt ponds in sand, *Snodgrass & Heller*, no. 355 (hb. Gr.). Widely distrib. on trop. shores.

## BASELLACEAE.

## BOUSSINGAULTIA, HBK.

*B. BASELLOIDES*, HBK. Nov. Gen. & Sp. vii. 196, t. 645 (1825); Hook. f. (3), 193; Anderss. (1), 227, & (2), 97. — CHARLES ISL.: *Darwin*. Further distrib. Mex., W. Ind., trop. S. Am.

## PHYTOLACCACEAE.

## PHYTOLACCA, L.

*P. DECANDRA*, L. Sp. ed. 2, 631 (1763); Hook. f. (3), 193; Anderss. (1), 227, & (2), 97. — JAMES ISL.: *Darwin*, acc. to Hook. f. Further distrib. U. S. and Canada. It is probable that the Galapageian plant, which curiously enough has not been secured by any subsequent collector, will prove to be *P. octandra* L., or a related trop. American species.

## NYCTAGINACEAE.

## BOERHAAVIA, L.

*B. ERECTA*, L. Sp. 3 (1753); Hook. f. (3), 193; Anderss. (1), 170, & (2), 64. — ALBEMARLE ISL.: *Macrae*. CHATHAM ISL.: *Andersson* (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*.

*B. PANICULATA*, Rich. Act. Soc. Hist. Nat. Par. i. 105 (1792); Anderss. (1), 171, & (2), 64. *B. decumbens*, Vahl, Enum. i. 284 (1804); Hook. f. (3), 193. — JAMES ISL.: *Darwin*, and acc. to *Andersson*, l. c. (but probably by error) *Scouler*. Further distrib. S. United States, Mex., trop. S. Am. The identity of the Galapageian plant is doubtful.

*B. SCANDENS*, L. Sp. 3 (1753); Hook. f. (3), 193; Anderss. (1), 170, & (2), 64. — CHARLES ISL.: *Darwin*; stony, grassy ground in the middle and lower region, *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 427 (hb. Gr.). CHATHAM ISL.: *Andersson*; *Snodgrass & Heller*, no. 527 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*. JAMES ISL.: *Darwin*. Further distrib. S. United States, Mex., W. Ind., S. Am.

*B. viscosa*, Lag. & Rod. Anal. Cienc. Nat. iv. 256 (1801); *B. hirsuta*, Hook. f. (3), 193; Choisy in DC. Prodr. xiii. pt. 2, 451, in part; Anderss. (1), 170, & (2), 64; Rob. & Greenm. (1), 147; not Jacq., nor L., nor Willd. *B. diffusa*, Anderss. (1), 171, & (2), 64, not L. *B. glandulosa*, Anderss. (1), 171, & (2), 64. — ALBEMARLE ISL.: *Macrae*; Andersson; Tagus Cove, common in tufa soil up to 300 m., *Snodgrass & Heller*, no. 170 (hb. Gr.); mountain east of Tagus Cove, *Snodgrass & Heller*, no. 252 (hb. Gr.). CHARLES ISL.: in grassy, stony places, *Andersson* (hb. Gr.); *Lee* (hb. U. S. Nat. Mus.); southwest end lower region, *Baur*, no. 309 (hb. Gr.); *Snodgrass & Heller*, no. 428 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *Baur*; *Snodgrass & Heller*, no. 543 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 622 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 670 (hb. Gr.). JAMES ISL.: James Bay, on bluffs near the beach, *Snodgrass & Heller*, no. 377 (hb. Gr.). Although I have not seen original material of Andersson's *B. glandulosa* I find plants from Albemarle collected by Messrs. Snodgrass & Heller, which correspond so closely with Andersson's description that I cannot avoid the conclusion that they represent just what Andersson had. Nevertheless the plants seem to be only starved and dwarfed *B. viscosa*, growing as Andersson says in *locis sterilissimis*. Further distrib. S. W. United States, Mex., W. S. Am. southward to Chili.

#### CRYPTOCARPUS, HBK.

*C. PYRIFORMIS*, HBK. Nov. Gen. & Sp. ii. 188, t. 124 (1817); Hook. f. (3), 193; Anderss. (1), 161, & (2), 58; Rob. & Greenm. (1), 147. — GALAPAGOS IDS.: *Edmonston* (hb. Gr.); *Habel*. ALBEMARLE ISL.: Elizabeth Bay, on lava fields near beach, *Snodgrass & Heller*, no. 941 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 912 (hb. Gr.). BARRINGTON ISL.: *Baur*, acc. to Rob. & Greenm. l. c. (specimen not in hb. Gr., but sent to hb. Clark Univ.). BINDLOE ISL.: *Snodgrass & Heller*, no. 786 (hb. Gr.). CHARLES ISL.: *Baur*, acc. to Rob. & Greenm. l. c. (specimen not in hb. Gr., but sent to hb. Clark Univ.). CHATHAM ISL.: *Darwin*. HOOD ISL.: *Baur*, no. 306 (hb. Gr.). JAMES ISL.: James Bay, *Baur*, no. 305 (hb. Gr.); forming dense thickets 1 to 1.3 m. high on lava coast, *Snodgrass & Heller*, no. 372 (hb. Gr.). NARBOROUGH ISL.: east side, *Snodgrass & Heller*, no. 922 (hb. Gr.). Further distrib. Ecuador, Bolivia.

## PISONIA, L.

P FLORIBUNDA, Hook. f. (3), 193; Choisy in DC. Prodr. xiii. pt. 2, 447; Anderss. (1), 171, & (2), 65. — ALBEMARLE ISL.: Iguana Cove, Snodgrass & Heller, no. 65 (hb. Gr.). JAMES ISL.: Darwin. Endemic.

NYCTAGINACEA? — SEYMOUR ISL.: north, Snodgrass & Heller, no. 574 (hb. Gr.). A weak, armed shrub with orbicular petiolate leaves recalling those of a *Boerhaavia*. Sterile and indeterminate.

## AIZOACEAE.

## MOLLUGO, L.

M. FLAVESCENS, Anderss. (1), 226, & (2), 96, t. 15, f. 2; Rob. & Greenm. (1), 146 as to pl. Chatham and pl. Albemarle. ? *M. verticillata*, Hook. f. (3), 232; Anderss. (1), 225, & (2), 96; not L. — ALBEMARLE ISL.: Darwin, identity doubtful; *Macrae*, identity doubtful; Baur, identity doubtful. CHARLES ISL.: Snodgrass & Heller, no. 441 (hb. Gr.). CHATHAM ISL.: Darwin, identity doubtful; Andersson (hb. Gr.); northern part, Baur, no. 155 (hb. Gr.); southwestern part, lower region, Baur, no. 154 (hb. Gr.). INDEFATIGABLE ISL.: northern part, Snodgrass & Heller, no. 667 (hb. Gr.). Endemic.

In all these specimens so far as seen the pedicels are rather short, some ascending, others deflexed. Distinguishable is

Var. *floriana*. *M. flavescens*, Rob. & Greenm. l. c. as to pl. Charles Isl. Pedicellis 4–9 mm. longis, omnibus erectis vel adscendentibus; floribus paulo quam illi formæ typicæ majoribus. — CHARLES ISL.: Cormorant Bay, Baur, no. 137. Endemic. In this variety as in the typical form the seeds are black, dull, and minutely tessellated.

M. GRACILLIMA, Anderss. (1), 226, & (2), 96; Rob. & Greenm. (1), 146. *M. gracilis*, Anderss. (2), t. 15, f. 3. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: Iguana Cove, Snodgrass & Heller, nos. 79 (hb. Gr.), 122 (hb. Gr.); Tagus Cove, abundant everywhere up to 300 m. alt., Snodgrass & Heller, no. 192 (hb. Gr.). CHARLES ISL.: in the driest parts of the lower region, Andersson (hb. Gr.). JAMES ISL.: Orchilla Bay, Baur, no. 153 (hb. Gr.). Endemic. By Hook. f. & Jacks. Ind. Kew. ii. 253, this species is reduced to *M. verticillata*, L. It differs, however, in several ways, namely by having smaller flowers, a shorter capsule relatively to the blunter sepals and in its minute black tessellated, not ribbed seeds.

*M. Snodgrassii*, nov. sp., perennans; radice crassa; caudice ramosa crassa nodosa plus minusve suberifera; caulibus pluribus erectis ramosis nodosis nunc geniculatis subscopariis teretibus striatulis glaberrimis 3 dm. altis; internodiis perlongis (saepe 7 cm.); foliis crassiusculis, radicalibus spatulatis 1.6 cm. longis, 6 mm. latis apice rotundatis caulibus anguste linearibus obtusis vel acutis glaberrimis vel minutissime papillois 1-2 cm. longis 1.2 mm. latis, umbellis 2-6 floribus sessilibus; pedicellis 4-15 mm. longis capillaribus; sepalis ellipticis obtusis 3(-5)-nerviis 4 mm. longis staminibus 7 sepalis paulo superantibus; filamentis gracilibus glaberrimis; ovario ovoideo obtusissimo; stylis 3 filiformibus; stigmatibus plus minusve elongatis subrecurvatis; capsula 3 mm. longa; seminibus subglobosis nigrescentibus glaberrimis lucidis sub lenti lineas concentricas curvatas exhibitibus. — ALBEMARLE ISL.: Elizabeth Cove, 15 February, 1899, *Snodgrass & Heller*, no. 268 (hb. Gr.). TAGUS COVE, 20 January, 1899, *Snodgrass & Heller*, no. 914 (hb. Gr.). NARBOROUGH ISL.: Mangrove Point, common, scattered everywhere in crevices of lava from near the beach to 600 m. alt., April, 1899, *Snodgrass & Heller*, no. 309 (hb. Gr., type); east side, *Snodgrass & Heller*, no. 921 (hb. Gr.). Endemic. Well marked among its Galapageian congeners by its perennial habit, suberiferous base, long pedicels, large flowers, etc.

#### SESUVIUM, L.

*S. EDMONSTONEI*, Hook. f. (3), 221; Anderss. (1), 225, & (2), 95; Rob. & Greenm. (1), 146. — GALAPAGOS IDS.: *Edmonston* (hb. Gr.); *Habel*. BARRINGTON ISL.: *Baur*, no. 151 (hb. Gr.). CHARLES ISL.: *Goodridge*. GARDNER ISL.: *Snodgrass & Heller*, no. 638 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 561 (hb. Gr.). Endemic.

*S. PORTULACASTRUM*, L. Syst. Nat. ed. 10, 1058 (1760). *S. Portulacastrum*, var. *revolutum*, Sims, Bot. Mag. xli. t. 1701. *Portulaca Portulacastrum*, L. Sp. 446 (1753). — ALBEMARLE ISL.: Elizabeth Cove, *Snodgrass & Heller*, no. 265 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 561 a (hb. Gr.). Further distrib. S. United States, Mex., W. Ind., S. Am., China, etc.

#### TRIANTHEMA, L.

*T. PORTULACASTRUM*, L. Sp. 223 (1753); Moench, Meth. 700. *T. monogyna*, L. Mant. i. 69 (1767); DC. Pl. Gras. t. 109; Anderss. (1), 225, & (2), 95; Rob. & Greenm. (1), 146. — BARRINGTON ISL.:

*Snodgrass & Heller*, no. 480 (hb. Gr.). CHARLES ISL.: *Andersson* (hb. Gr.); Cuevas Bay, *Baur*, no. 152 (hb. Gr.); *Snodgrass & Heller*, no. 409 (hb. Gr.). CHATHAM ISL.: *Andersson*. DUNCAN ISL.: *Snodgrass & Heller*, nos. 713 (hb. Gr.), 714 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 630 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 737 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*. JAMES ISL.: *Andersson*. SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 575 (hb. Gr.); south, *Snodgrass & Heller*, no. 588 (hb. Gr.). Further distrib. S. United States, Mex., W. Ind., S. Am., E. Ind.

## PORTULACACEAE.

## PORTULACA, L.

*P. OLERACEA*, L. Sp. 445 (1753). *P. parvifolia*, Haw. Syn. Pl. Succ. 122 (1812); *Anderss.* (1), 225, & (2), 95. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 30 (hb. Gr.). CHARLES ISL.: in cultivated ground of lower region, *Andersson*; *A. Agassiz* (hb. U. S. Nat. Mus.); *Snodgrass & Heller*, no. 409a (hb. Gr.). CHATHAM ISL.: *Snodgrass & Heller*, no. 528 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, nos. 619 (hb. Gr.), 620 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 735 (hb. Gr.). Further distrib. cosmop. None of the earlier explorers in the Galapagos Ids. mention this weed of cultivated ground. It was first noted in the group by *Andersson* on Charles Isl. in 1852, and its present much more general distribution among the islands well shows the fact that intercommunication between them must now be such as to carry seeds frequently from one to the other.

*P. sp.?* — WENMAN ISL.: *Snodgrass & Heller*, no. 916 (hb. Gr.), sterile and indeterminate.

## CARYOPHYLLACEAE.

## DRYMARIA, Willd.

*D. CORDATA*, Willd. ex Roem. & Schultes, Syst. v. 406 (1819); Rob. & Greenm. (1), 145. *D. glaberrima*, Bart. in J. & C. Presl, Rel. Haenk. 7 (1835), so far as char. goes; Hook. f. (3), 232; *Anderss.* (1), 227, & (2), 97; *Carnel* (1), 623. — CHATHAM ISL.: *Chierchia*; southwest end, upper region, *Baur*, no. 3 (hb. Gr.). JAMES ISL.: *Darwin*. From Bartling's detailed description of his *D. glaberrima*, I cannot avoid the conclusion that it is *D. cordata*. Further distrib. Mex., W. Ind., S. Am.

## MENISPERMACEAE.

## CISSAMPELOS, L.

*C. PAREIRA*, L. Sp. 1031 (1753); Lam. Ill. t. 830; Hook. f. (3), 233; Anderss. (1), 220, & (2), 92; Caruel (1), 624; Rob. & Greenm. (1), 145. *C. testudinum*, Miers, Contrib. iii. 143 (1864-1871). — ABINGDON ISL.: *Snodgrass & Heller*, no. 849 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 67 (hb. Gr.), 91 (hb. Gr.), 871 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 221 (hb. Gr.), 902 (hb. Gr.). CHARLES ISL.: *Darwin*; in the upper region, *Andersson*; *Chierchia*; *Baur*, no. 2 (hb. Gr.). CHATHAM ISL.: southwest end, upper region, *Baur*, no. 1 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. general in trop. regions. Miers, l. c., separates the Galapageian plant as *C. testudinum*, but good distinctions are not evident.

## CRUCIFERAE.

## BRASSICA, L.

*B. CAMPESTRIS*, L. Sp. 666 (1753). — CHARLES ISL.: *Snodgrass & Heller*, no. 406 (hb. Gr.). Further distrib. cosmop.

*B. SINAPISTRUM*, Boiss. Voy. Esp. ii. 39 (1839-1845). *Sinapis arvensis*, L. Sp. 668 (1753); Anderss. (1), 220, & (2), 93. — CHARLES ISL.: cultivated ground in upper and middle region, *Andersson*. Further distrib. cosmop.

## RAPHANUS, L.

*R. SATIVUS*, L. Sp. ed. 2, 935 (1763); Anderss. (1), 220, & (2), 93. — CHARLES ISL.: cultivated ground in middle and upper regions, *Andersson*. Further distrib. cosmop. through cult.

## SENEBIERA, Poir.

*S. PINNATIFIDA*, DC. Mém. Soc. Hist. Nat. Par. vii. 144, t. 9 (1799); Hook. f. (3), 233; Anderss. (1), 221, & (2), 93. *S. didyma*, Pers. Syn. ii. 185 (1807). *Lepidium didymum*, L. Mant. 92 (1767). *Coronopus didymus*, Smith, Fl. Brit. ii. 691. — JAMES ISL.: *Darwin*. Further distrib. cosmop.

## ROSACEAE?

*SANGUISORBEA*? Wolf (1), 283, & (2), 259. — CHARLES ISL.: acc. to Wolf. Probably an error. Plant described as thorny and with pinnate leaves.



## LEGUMINOSAE.

## ACACIA, Willd.

*A. FARNESIANA*, Willd. Sp. iv. 1083 (1806). *A. Cavenia*, Bert. ex Bull. Férussac, xx. 108 (1830), acc. to Hook. f. & Jacks. Ind. Kew. i. 7; Hook. & Arn. Bot. Beech. 21 (1830); Hook. f. (3), 228; Anderss. (1), 255, & (2), 113. — ALBEMARLE ISL.: *Darwin*; *Macrae*. Further distrib. extra trop. S. Am., also the Texano-Mexican region?

*A. MACRACANTHA*, H. & B. in Willd. Sp. iv. 1080 (1806); Kunth, Mimos. t. 28; Benth. Trans. Linn. Soc. xxx. 500; Rob. & Greenm. (1), 146. *A. flexuosa*, H. & B. in Willd. l. c. 1082 (1806); Hook. f. (3), 229; Anderss. (1), 256, & (2), 113. — GALAPAGOS IDS.: *Habel*. CHARLES ISL.: *Baur*; *Snodgrass & Heller*, no. 415 (hb. Gr.). CHATHAM ISL.: *Andersson*. INDEFATIGABLE ISL.: south of Conway Bay, *Baur*, no. 94 (hb. Gr.). JAMES ISL.: *Scouler*. Further distrib. S. Am., W. Ind. An *Acacia* mentioned by Caruel (1), 623, as collected on Charles Isl., by *Chierchia* may well have been this species.

*A. TORTUOSA*, Willd. Sp. iv. 1083 (1806); Benth. Trans. Linn. Soc. xxx. 501; Rob. & Greenm. (1), 146. *A. tortuosa*, var. *glabrior*, Hook. f. (3), 229; Anderss. (1), 256, & (2), 113. *A. albida*, Lindl. Bot. Reg. t. 1317 (1830). — CHARLES ISL.: grassy places, middle region, *Andersson*. CHATHAM ISL.: similar situations, *Andersson*. JAMES ISL.: *Scouler*; *Darwin*; Orchilla Bay, *Baur*, no. 65 (hb. Gr.); James Bay, *Baur*, no. 64 (hb. Gr.). Further distrib. Mex., W. Ind., northern S. Am.

*A. sp. affin. A. macracantha*, H. & B. — ALBEMARLE ISL.: mountain north of Elizabeth Cove, *Snodgrass & Heller*, no. 283 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 161 (hb. Gr.). In its minute leaflets, velvety branchlets, and small spines this is very different from the preceding or indeed from any specimen of *A. macracantha* at hand. The species, however, has been so widely drawn by Bentham, l. c., and contains such an aggregation of old species, that it is impossible to characterize with confidence any new species of this affinity until the whole group can be worked over again.

*A. sp.?* Hook. f. (4) 261. — CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c.

*A. sp.* — JAMES ISL.: *Snodgrass & Heller*, no. 398 (hb. Gr.). Near *A. tortuosa*, but with larger leaflets.

## ASTRAGALUS, L.

A. *Edmonstonei*. *Phaca Edmonstonei*, Hook. f. (3), 227; Anderss. (1), 249, & (2), 110. — GALAPAGOS IDS.: *Du Petit-Thouars*. CHARLES ISL.: *Edmonston*. Endemic. Not secured by Andersson or any subsequent collector.

## CAESALPINIA, L.

C. *BONDUCELLA*, Fleming in As. Res. xi. 159 (1810); Rob. & Greenm. (1), 146. — ALBEMARLE ISL.: *Baur*, no. 79 (hb. Gr.). Further distrib. general in warm reg.

C. *PULCHERRIMA*; Sw. Obs. 166 (1791); Maund, Bot. iv. t. 151. *Poinciana pulcherrima*, L. Sp. 380 (1753); Hook. f. (4), 261; Anderss. (1), 253, & (2), 112; Caruel (1), 624. — CHARLES ISL.: *Edmonston*, as a relic of former cultivation acc. to Andersson. CHATHAM ISL.: *Chierchia*. Further distrib. cosmop. trop.

## CANAVALIA, Adans.

C. *OBTUSIFOLIA*, DC. Prodr. ii. 404 (1825); Mart. Fl. Bras. xv. pt. 1, 178, t. 48. *Dolichos obtusifolius*, Lam. Dict. ii. 295 (1786). — GALAPAGOS IDS.: *Habel*. BINDLOE ISL.: *Snodgrass & Heller*, no. 770 (hb. Gr.). Further distrib. general in tropics.

## CASSIA, L.

C. *HIRSUTA*, L. Sp. i. 378; Benth. in Mart. Fl. Bras. xv. pt. 2, 114, to 34, f. 1, & Trans. Linn. Soc. xxx. 534. — CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.). Further distrib. Peru to Mex. and Brazil. Professor Lee's plant is only in flower and the identification is subject to some doubt.

C. *OCCIDENTALIS*, L. Sp. 377 (1753); DC. Prodr. ii. 497; Benth. Trans. Linn. Soc. xxvii. 532; Lindl. Bot. Reg. t. 83; Anderss. (1), 254, & (2), 112; Caruel, (1), 624; Rose (1), 137; Rob. & Greenm. (1), 146. — ALBEMARLE ISL.: *Iguana Cove*, *Snodgrass & Heller*, nos. 68 (hb. Gr.), 95 (hb. Gr.). CHARLES ISL.: in grassy places of the upper region, *Andersson*; *Snodgrass & Heller*, no. 425 (hb. Gr.), a form with unusually obtuse leaflets. CHATHAM ISL.: in grassy places of the middle region, *Andersson*; *Chierchia*; *A. Agassiz* (hb. Gr. & hb. U. S. Nat. Mus.); southwest end, middle region, *Baur*, no. 85 (hb. Gr.); *Snodgrass & Heller*, no. 556 (hb. Gr.). Widely distrib.

*C. PICTA*, Don, Syst. ii. 444 (1832); Hook. f. (3), 229; Anderss. (1), 255, & (2), 112; Benth. Trans. Linn. Soc. xxvii. 552; Rose (1), 137. *C. appplanata*, Anderss. (1), 254, acc. to Benth. l. c. — ALBEMARLE ISL.: *Macrae*; Iguana Cove, *Snodgrass & Heller*, no. 48 (hb. Gr.); Tagus Cove, not common near the shore but abundant inland at 150 m. alt., flowers Feb. to the middle of Mar., *Snodgrass & Heller*, no. 169. CHATHAM ISL.: *Darwin*; *Andersson* (hb. Gr.); *A. Agassiz*. Further distrib. Ecuador.

*C. SERICEA*, Sw. Prodr. 66 (1788), & Fl. Ind. Occ. 724; Benth. in Mart. Fl. Bras. xv. pt. 2, 116, t. 35, f. 1; Anderss. (1), 254, & (2), 112. — CHATHAM ISL.: *Andersson*. INDEFATIGABLE ISL.: lower region, *Andersson*. SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 607 (hb. Gr.). Further distrib. Mex., W. Ind., trop. S. Am.

#### CROTALARIA, L.

*C. GLABRESCENS*, Anderss. (1), 248, & (2), 109; Rose (1), 137. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: Tagus Cove, *Snodgrass & Heller*, no. 176 (hb. Gr.). CHATHAM ISL.: *Andersson*; ?*A. Agassiz* acc. to Rose, l. c. Endemic.

*C. PUMILA*, Ort. Dec. ii. 23 (1797); DC. Prodr. ii. 132; Anderss. (2), 109. *C. lupulina*, HBK. Nov. Gen. & Sp. vi. 402, t. 590 (1823); DC. Prodr. ii. 133; Hook. f. (3), 225; Anderss. (1), 248, & (2), 109. *C. puberula*, Hook. f. (3), 225; Anderss. (1), 248, & (2), 109; Rob. & Greenm. (1), 146. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: *Darwin*; Iguana Cove, *Snodgrass & Heller*, no. 98 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 174 (hb. Gr.), 878 (hb. Gr.). CHARLES ISL.: *Darwin*; in the upper region, *Andersson*; *Snodgrass & Heller*, no. 435 (hb. Gr.). CHATHAM ISL.: in grassy places of the middle region, *Andersson*; southwest end, middle region, *Baur*, no. 99 (hb. Gr.); southwest end, upper region, *Baur*, no. 98 (hb. Gr.); *Snodgrass & Heller*, no. 554 (hb. Gr.). JAMES ISL.: James Bay, common everywhere, *Snodgrass & Heller*, no. 391 (hb. Gr.). NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, no. 323 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 610 (hb. Gr.). Further distrib. W. Ind., Mex.

*C. SETIFERA*, DC. Prodr. ii. 131 (1825); A. DC. Calques des Dess. t. 226. — ALBEMARLE ISL.: Tagus Cove, alt. 1230 m., *Snodgrass & Heller*, nos. 879 (hb. Gr.), 882 (hb. Gr.). Further distrib. Mex., Centr. Am.

## DALEA, L.

*D. PARVIFOLIA*, Hook. f. (3), 225; Anderss. (1), 249, & (2), 109; Rob. & Greenm. (1), 146. — ALBEMARLE ISL.: Tagus Cove, on mountain, alt. 215 to 460 m., bush 1 to 2 m. high, *Snodgrass & Heller*, no. 222 (hb. Gr.). CHARLES ISL.: *Baur*, no. 102 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.). INDEFATIGABLE ISL.: south of Conway Bay, *Baur*, no. 104 (hb. Gr.). JAMES ISL.: *Darwin*; *Baur*, no. 103 (hb. Gr.). Endemic.

*D. TENUICaulis*, Hook. f. (3), 226; Anderss. (1), 249, & (2), 110; Rob. & Greenm. (1), 146. — ALBEMARLE ISL.: *Darwin*; southern part, *Baur*, no. 105 (hb. Gr.). CHATHAM ISL.: *Andersson*. Endemic.

## DESMANTHUS, Willd.

*D. DEPRESSUS*, H. & B. ex Willd. Sp. iv. 1046 (1806); Kunth, Mimos. 115, t. 35; Hook. f. (3), 228; Anderss. (1), 255, & (2), 113; Benth. Trans. Linn. Soc. .xxx. 386; Rose (1), 137; Rob. & Greenm. (1), 146. — CHARLES ISL.: *Darwin*. CHATHAM ISL.: *A. Agassiz*, acc. to Rose, l. c.; southwestern end, middle region, *Baur*, no. 77 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 704 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 627 (hb. Gr.). HOOD ISL.: *Baur*, no. 78 (hb. Gr.); *Snodgrass & Heller*, no. 749 (hb. Gr.), no. 750 (hb. Gr.). Further distrib. S. United States, Mex., W. Ind., S. Am.

## DESMODIUM, Desv.

*D. galapagense*. *D. filiforme*, Hook. f. (3), 227; Anderss. (1), 249, & (2), 110; not Zoll. & Mor. — JAMES ISL.: *Darwin*. Endemic.

*D. INCANUM*, DC. Prodr. ii. 332 (1825); Caruel, (1), 624; Rob. & Greenm. (1), 146. — CHATHAM ISL.: *Chierchia*; southwest end, middle region, *Baur*, no. 71 (hb. Gr.); also a questioned variety of this species, *Chierchia*, acc. to Caruel, (1), 624. Further distrib. Mex., W. Ind., S. Am.

*D. MOLLE*, DC. Prodr. ii. 332; Anderss. (1), 250, & (2), 110; Rob. & Greenm. (1), 146. — ABINGDON ISL.: *Snodgrass & Heller*, no. 824 (hb. Gr.). ALBEMARLE ISL.: rather common in tufa soil up to 185 m. alt., *Snodgrass & Heller*, no. 203 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 83 (hb. Gr.); *Snodgrass & Heller*, no. 765 (hb. Gr.). CHARLES ISL. *Andersson*; *Baur*. GARDNER ISL.: *Snodgrass & Heller*, no. 618 (hb. Gr.). HOOD ISL.: *Baur*, no. 84 (hb. Gr.); *Snodgrass & Heller*,

no. 727 (hb. Gr.). INDEFATIGABLE ISL.: *Baur*; northern part, *Snodgrass & Heller*, no. 652 (hb. Gr.). JERVIS ISL.: *Baur*, no. 81 (hb. Gr.). Not noticed by Darwin and the earlier collectors, and found only on one island (Charles) by *Andersson*; hence probably a recently introduced although now generally distributed plant in the islands. Further distrib. general in trop. and sub-trop. Am.

*D. SPIRALE*, DC. Prodr. ii. 332 (1825); Benth. in Mart. Fl. Bras. xv. pt. 1, 105; Rob. & Greenm. (1), 146. *D. tenuiculum*, DC. Prodr. ii. 333 (1825); *Anderss.* (1), 249, & (2), 110. — ALBEMARLE ISL.: Tagus Cove, tolerably common in shady places, from the beach to 300 m. alt., *Snodgrass & Heller*, no. 193 (hb. Gr.). BINDLOE ISL.: *Baur* (hb. Gr.). CHARLES ISL.: on dry places of middle region, *Andersson*; *Snodgrass & Heller*, no. 444 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 644 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 734 (hb. Gr.). JAMES ISL.: on rocks near beach, *Snodgrass & Heller*, no. 379 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 609 (hb. Gr.). Further distrib. Mex., W. Ind., trop. S. Am.

*D. UNCINATUM*, DC. Prodr. ii. 331 (1825); Rob. & Greenm. (1), 146. — CHATHAM ISL.: southwest end, middle region, *Baur*, no. 93 (hb. Gr.). Further distrib. N. Am., S. Am.

#### ERYTHRINA, L.

*E. VELUTINA*, Willd. Ges. Naturf. Fr. Neue Schr. iii. 426 (1801); Hook. Bot. Mag. lx. t. 3227; Rob. & Greenm. (1), 146. — JAMES ISL.: James Bay, *Baur*, no. 72 (hb. Gr.). Further distrib. S. Am., W. Ind. This is doubtless the red-seeded tree mentioned in Nature, vi. 353 as observed on James Island by the members of the Hassler expedition.

#### GALACTEA, P. Br.

*G. JUSSIAEANA*, Kunth, var. *VOLUBILIS*, Benth. in Mart. Fl. Bras. xv. pt. 1, 143 (1859). *G. velutina*, Benth. in Hook. Jour. Bot. ii. 59 (1840); *Anderss.* (2), 111. *Phaseolus tomentosus*, *Anderss.* (1), 250. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 63 (hb. Gr.); Tagus Cove, not common, *Snodgrass & Heller*, no. 208 (hb. Gr.). CHARLES ISL.: *Andersson*. CHATHAM ISL.: *Andersson* (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 666 (hb. Gr.). NARBOROUGH ISL.: northern part, *Snodgrass & Heller*, no.

300 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 576 (hb. Gr.). Further distrib. S. Am.

Var. *GLABRESCENS*, Benth. in Mart. Fl. Bras. xv. pt. 1, 143 (1859). CHATHAM ISL.: *Snodgrass & Heller*, no. 544 (hb. Gr.). Further distrib. Brazil.

G. n. sp., Hook. f. (4), 261. — CHARLES ISL.: *Edmonston*, acc. to Hook. f.

#### GEOFFRAEA, L.

G. SUPERBA, H. & B. Pl. Aequin. ii. 69, t. 100 (1809) as *Geoffroya*. — HOOD ISL.: *Snodgrass & Heller*, no. 738 (hb. Gr.). Further distrib. trop. S. Am. Not before reported from the Galapagos Ids.

#### MIMOSA, L.

M. ASPERATA, L. Syst. Nat. ed. 10, 1312 (1760); Benth. Trans. Linn. Soc. xxx. 437; Hook. f. (4), 262; Anderss. (1), 256, & (2), 113. *M. pellita*, Kunth, Mimos. 27, t. 9 (1819). — CHARLES ISL.: *Edmonston*. Further distrib. S. United States, Mex., W. Ind., S. Am., Afr., and Madagascar.

#### NEPTUNIA, Lour.

N. PLENA, Benth. in Hook. Jour. Bot. iv. 355 (1842), & Trans. Linn. Soc. xxx. 383. *N. surinamensis*, Steud. Flora, xxvi. 759 (1843); Anderss. (1), 255, & (2), 113; Rob. & Greenm. (1), 146. Perhaps the *Piptadenia*? sp. of Hook. f. (4), 262. — CHARLES ISL.: *Edmonston*? *Andersson*; Cuevas Bay, *Baur*, no. 69 (hb. Gr.). CHATHAM ISL.: in grassy places of the middle region, *Andersson*; *Baur*; *Snodgrass & Heller*, no. 495 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 626 (hb. Gr.). INDEFATIGABLE ISL.: south of Conway Bay, *Baur*, no. 66 (hb. Gr.); northern part, *Snodgrass & Heller*, no. 658 (hb. Gr.). JERVIS ISL.: *Baur*, no. 68 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 577 (hb. Gr.); south, *Snodgrass & Heller*, no. 603 (hb. Gr.). Further distrib. Mex., W. Ind., S. Am.

#### PARKINSONIA, L.

P. ACULEATA, L. Sp. 375 (1753); Benth. in Mart. Fl. Bras. xv. pt. 2, 76, t. 26; Hook. f. (4), 262; Anderss. (1), 253, & (2), 112; Rose (1), 137; Rob. & Greenm. (1), 146. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: southern part, *Baur*, no. 75 (hb. Gr.). CHARLES ISL.: *Edmonston*; Cuevas Bay, *Baur*, no. 74 (hb. Gr.); *Snodgrass & Heller*, no. 405 (hb. Gr.). CHATHAM ISL.: *Andersson*; *A. Agassiz*;



southwestern part, lower region, *Baur*, no. 73 (hb. Gr.); *Snodgrass & Heller*, no. 498 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 76 (hb. Gr.); *Snodgrass & Heller*, no. 693 (hb. Gr.). HOOD ISL.: *Baur*, no. 80 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 606 (hb. Gr.). Further distrib. S. United States, Mex., W. Ind., S. Am.

## PHASEOLUS, L.

*P. ADENANTHUS*, G. F. W. Mey. Prim. Fl. Esseq. 239 (1818). *P. truxillensis*, HBK. Nov. Gen. & Sp. vi. 451 (1823). — GALAPAGOS IDS.: *Habel*. HOOD ISL.: *Snodgrass & Heller*, no. 754 (hb. Gr.). Further distrib. tropics of the New World, also introd. (?) in E. Ind.

*P. MOLLIS*, Hook. f. (3), 228; Anderss. (1), 250, & (2), 110; ? Rob. & Greenm. (1), 146. — JAMES ISL.: *Darwin*. JERVIS ISL.: *Baur*, no. 86. (hb. Gr.), identity somewhat doubtful. Endemic.

*P. SEMIERECTUS*, L. Mant. i. 100 (1767); Jacq. Ic. t. 558; Bot. Reg. ix. t. 743; Rob. & Greenm. (1), 146. *P. cytisoides*, Anderss. (1), 251, & (2), 110, not Zoll. & Mor. — CHARLES ISL.: *Andersson* (hb. Gr.); *Lee* (hb. U. S. Nat. Mus.); *Baur*, no. 88 (hb. Gr.); *Snodgrass & Heller*, no. 424 (hb. Gr.). CHATHAM ISL.: *Baur*; *Snodgrass & Heller*, no. 555 (hb. Gr.). Further distrib. general in the tropics.

## PISCIDIA, L.

*P. ERYTHRINA*, L. Sp. ed. 2, 993 (1763); Hook. f. (3), 228; Anderss. (1), 253, & (2), 112. — CHATHAM ISL.: *Darwin*; *Snodgrass & Heller*, no. 503 (hb. Gr.). JAMES ISL.: ? Further distrib. trop. Am. There can be little doubt that this is the species with winged pods, mentioned in *Nature*, vi. 353, as observed by the members of the Hassler expedition.

## PROSOPIS, L.

*P. DULCIS*, Kunth, Mimos. 110, t. 34 (1819); Hook. f. (3), 229; Anderss. (1), 255, & (2), 112; Rob. & Greenm. (1), 146. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 852 (hb. Gr.). CHARLES ISL.: *Darwin*; *Snodgrass & Heller*, no. 416 (hb. Gr.). CHATHAM ISL.: *Baur* (hb. Gr.); *Snodgrass & Heller*, no. 531 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, nos. 694 (hb. Gr.), 695, (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 623 (hb. Gr.).

HOOD ISL.: *Snodgrass & Heller*, no. 739 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 677 (hb. Gr.). JAMES ISL.: James Bay, abundant near beach in sand and lava soil, *Snodgrass & Heller*, no. 366 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 586 (hb. Gr.). Further distrib. Mex., S. Am.

#### RHYNCHOSIA, Lour.

*R. MINIMA*, DC. *Mém. Leg.* ix. 363 (1825), & *Prodr.* ii. 385; Hook. f. (3), 228; Anderss. (1), 251, & (2), 111; Rob. & Greenm. (1), 146. *R. punctata*, DC. *Mém. Leg.* ix. t. 56, & *Prodr.* ii. 385; Anderss. (1), 252, & (2), 111. *R. aureo-guttata*, Anderss. (1), 252, & (2), 111. *R. exigua*, Anderss. (1), 252, & (2), 111. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 833 (hb. Gr.). ALBEMARLE ISL.: *Darwin*; Iguana Cove, *Snodgrass & Heller*, nos. 62 (hb. Gr.), 121 (hb. Gr.); Elizabeth Bay, north mountain, *Snodgrass & Heller*, no. 286 (hb. Gr.); Tagus Cove, abundant from the beach to 300 m. alt., *Snodgrass & Heller*, nos. 207 (hb. Gr.), 901 (hb. Gr.), 154 (hb. Gr.), the last number representing the small-leaved form (*R. exigua* of Andersson). BARRINGTON ISL.: *Baur*, no. 100 (hb. Gr.); *Snodgrass & Heller*, no. 477 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 101 (hb. Gr.). *Snodgrass & Heller*, no. 760 (hb. Gr.). CHARLES ISL.: *Andersson* (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 546 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 651 (hb. Gr.). NARBOROUGH ISL.: southern part, common up to 615 m. alt., *Snodgrass & Heller*, no. 313 (hb. Gr.). Further distrib. cosmop. trop. and subtrop.

*R. RETICULATA*, DC. *Prodr.* ii. 385 (1825); Hook. f. (3), 227; Anderss. (1), 251, & (2), 111. — CHATHAM ISL.: *Darwin*. Further distrib. trop. Am.

*R. sp.* — ALBEMARLE ISL.: mountain east of Tagus Cove, *Snodgrass & Heller*, no. 250 (hb. Gr.), also below 650 m., *Snodgrass & Heller*, no. 905 (hb. Gr.)

*R. sp.* — BINDLOE ISL.: *Snodgrass & Heller*, no. 773 (hb. Gr.). Sterile and doubtful.

#### STYLOSANTHES, Sw.

*S. SCABRA*, Vog. *Linnaea*, xii. 69 (1838); Taubert, *Abh. Bot. Ver. Prov. Brandenb.* xxxii. 24; Rob. & Greenm. (1), 146. — ABINGDON ISL.: *Snodgrass & Heller*, no. 838 (hb. Gr.). ALBEMARLE ISL.:

Tagus Cove, common up to 185 m. alt., *Snodgrass & Heller*, no. 171 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 90 (hb. Gr.); *Snodgrass & Heller*; no. 767 (hb. Gr.). CHARLES ISL.: *Baur*, no. 92 (hb. Gr.); *Snodgrass & Heller*, no. 450 (hb. Gr.). INDEFATIGABLE ISL.: *Baur* (no specimen in hb. Gr.); northern part, *Snodgrass & Heller*, no. 673 (hb. Gr.). JERVIS ISL.: *Baur*, no. 89 (hb. Gr.). Further distrib. Centr. & S. Am. Taubert, l. c., distinguishes the Galapageian plant seen in the Vienna Herbarium (coll. *Steindachner?*) as being villous-pubescent rather than scabrous. The material of the species at hand shows variation in its pubescence even upon the islands.

## TEPHROSIA, Pers.

*T. CINEREA*, Pers. Syn. ii. 328 (1807). *T. littoralis*, Pers. l. c. 329; Hook. f. (3), 226 (*littoralis*); Anderss. (1), 249, & (2), 110; Rob. & Greenm. (1), 146. — GALAPAGOS IDS.: *Du Petit-Thouars*, acc. to Hook. f.; *Habel*. ALBEMARLE ISL.: *Macrae*; Tagus Cove, not common, alt. 30 to 185 m., *Snodgrass & Heller*, no. 188 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 483 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 97 (hb. Gr.); *Snodgrass & Heller*, no. 774 (hb. Gr.). CHARLES ISL.: in stony places of lower and middle region, *Andersson*; *Snodgrass & Heller*, no. 440 (hb. Gr.). CHATHAM ISL.: *Andersson*; *Baur* (not in hb. Gr.); *Snodgrass & Heller*, no. 545 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 682 (hb. Gr.). NARBOROUGH ISL.: abundant acc. to Mr. Heller's field notes. SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 601 (hb. Gr.). Further distrib. throughout trop. Am. The Galapageian plant often has a velvety spreading pubescence on the stem, but is apparently only a form of this common and widely distributed species.

## VIGNA, Savi.

*V. OWAHUENSIS*, Vog. Linnaea, x. 585 (1836). *V. oahuensis*, A. Gray, Bot. U. S. Expl. Exped. i. 450. *V. ovyhensis*, var., Hook. f. (3), 228. *V. owaiensis*, Anderss. (1), 251, & (2), 111. — JAMES ISL.: *Darwin*, a variety acc. to Hook. f., l. c., who also credits this Hawaiian species to Chili. The identity of the Galapageian plant with the typical Hawaiian needs further confirmation. Further distrib. Hawaiian Ids., "Chili." Acc. to Hemsl. in litt., a doubtful *Vigna* was secured on the Galapagos Islands by Dr. Habel.

## OXALIDACEAE.

## OXALIS, L.

*O. CARNOSA*, Molina, Sagg. Chile, ed. 2, 288 (1810); Lindl. Bot. Reg. t. 1063; Hook. Bot. Mag. t. 2866; Walp. Rep. i. 487; Anderss. (1), 247, & (2), 108; Rob. & Greenm. (1), 145. — CHARLES ISL.: at the summit, *Andersson*. DUNCAN ISL.: *Baur*, without number (hb. Gr.). Further distrib. Chili.

*O. CORNELLI*, Anderss. (1), 246, & (2), 108. *O. Barrelieri*, Anderss. ll. cc., not L. *O. Agassizi*, Rose (1), 136; Rob. & Greenm. (1), 145. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 78 (hb. Gr.), and abundant near beach, *Snodgrass & Heller*, no. 118 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 197 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 471 (hb. Gr.). CHARLES ISL.: in sandy places, middle region, *Andersson* (hb. Gr.); *Baur* (no specimen in hb. Gr.). CHATHAM ISL.: in sterile parts of the upper region, *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 504 (hb. Gr.). DUNCAN ISL.: *A. Agassiz* (hb. Gr.); *Snodgrass & Heller*, no. 703 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 621 (hb. Gr.). HOOD ISL.: *Baur*, no. 35 (hb. Gr.); *Snodgrass & Heller*, no. 748 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; south of Conway Bay, *Baur*, no. 36 (hb. Gr.); northern part, *Snodgrass & Heller*, no. 672 (hb. Gr.). JAMES ISL.: James Bay, common on sea bluff, *Snodgrass & Heller*, no. 390 (hb. Gr.). Endemic.

*O. CORNICULATA*, L. Sp. 435 (1753); Rob. & Greenm. (1), 145. — CHATHAM ISL.: southwest end, upper region, *Baur* (hb. Gr.). Further distrib. cosmop.

## LINACEAE.

## LINUM, L.

*L. OLIGOPHYLLUM*, Willd. ex Schult. Syst. vi. 758 (1820); Urban, Linnaea, xli. 634. — ALBEMARLE ISL.: Tagus Cove Mountain, 215 to 925 m. alt., *Snodgrass & Heller*, nos. 225 (hb. Gr.), 898 (hb. Gr.). Further distrib. Andes of Ecuador and Peru.

## ZYGOPHYLLACEAE.

## KALLSTROEMIA, Scop.

*K. adscendens*. *Tribulus adscendens*, Anderss. (1), 245. *T. maximus*, var. *adscendens*, Anderss. (2), 107. *T. maximus*, Rose (1), 136. —

CHARLES ISL.: *Andersson*. CHATHAM ISL.: *Andersson* (hb. Gr.). DUNCAN ISL.: *A. Agassiz* (hb. U. S. Nat. Mus.). GARDNER ISL.: *Snodgrass & Heller*, no. 615 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 756 (hb. Gr.). Endemic. This species is by its much shorter style, etc., clearly distinct from *K. maximus*, Wight & Arn. (*Tribulus maximus*, L.). It is, however, exceedingly close to the plant recently characterized from the southwestern United States as *Kallstroemia brachystylis*, Vail, Bull. Torr. Club, xxiv. 206 (*Tribulus brachystylis*, Robinson, Syn. Fl. i. pt. 1, 354). The Galapageian plant, however, differs from the continental in slightly more slender habit, smaller and more unequal leaflets (usually 2 or 3 rather than 4 pairs), and more enduring sepals which persist even at the maturity of the fruit. *K. brachystylis* has been found in Mexico, but apparently not in S. America.

#### TRIBULUS, L.

*T. CISTOIDES*, L. Sp. 387 (1753); Hook. f. (3), 231; Anderss. (1), 244, & (2), 107. — ALBEMARLE ISL.: *Macrae*. CHARLES ISL.: *Snodgrass & Heller*, no. 400 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 743 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson* (hb. Gr.). JAMES ISL.: *Darwin*. SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 598 (hb. Gr.). Further distrib. general in warm and temperate countries.

Var. *anacanthus*, nov. var. *Formae typicae habitu foliisque similis; floribus plus minusve minoribus; petalibus 1-1.2 cm. longis; fructus carpellis vel tribus vel quatuor vel saepius omnibus ab aculeis omnino destitutis.* — ALBEMARLE ISL.: *Lee* (hb. Gr. & hb. U. S. Nat. Mus.). Tagus Cove, March, 1899, common near beach and on sandy hillsides up to 200 m. alt., *Snodgrass & Heller*, nos. 163 (hb. Gr.), 165 (hb. Gr.), & 915 (hb. Gr.). Endemic.

*T. SERICEUS*, Anderss. (1), 245, & (2), 107; Rob. & Greenm. (1), 145. *T. servicens*, var. *humifusus*, Rose, (1), 136. — CHARLES ISL.: in lower arid region, *Andersson* (var. *humifusus*); *A. Agassiz*; *Baur*, no. 39 (hb. Gr.). CHATHAM ISL.: in lower arid region, *Andersson* (var. *erectus*), (hb. Gr.). Endemic but too near the cosmopolitan *T. terrestris*, L.

*T. sp.* — CULPEPPER ISL.: *Snodgrass & Heller*, no. 3 (hb. Gr.). A velvety-tomentose species with short internodes and geniculate stem. The specimens are sterile and indeterminate.

## RUTACEAE.

## ZANTHOXYLUM, L.

*Z. PTEROTA*, HBK. Nov. Gen. & Sp. vi. 3 (1823); Hook. f. (3), 231; Anderss. (1), 244, & (2), 106; Rob. & Greenm. (1), 145 (*Xanthoxylon*). *Z. lentiscifolium*, Anderss. ll. cc. *Fagara Pterota*, L. Syst. Nat. ed. 10, 897 (1760); Engl. & Prantl, Nat. Pflanzenf. iii. Ab. 4, 117. *F. lentiscifolia*, H. & B. acc. to Willd. Enum. Hort. Berol. 165. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: alt. 525 m., *Snodgrass & Heller*, no. 836 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 53 (hb. Gr.), 903 (hb. Gr.); mountain east of Tagus Cove, alt. 925 m., *Snodgrass & Heller*, no. 231 (hb. Gr.). CHARLES ISL.: *Andersson*, identity doubtful; *Lee* (hb. U. S. Nat. Mus.). CHATHAM ISL.: southwest end, middle region, *Baur*, no. 40 (hb. Gr.). JAMES ISL.: *Darwin*. — NARBOROUGH ISL.: southern part, small tree, abundant at 615 m. alt., *Snodgrass & Heller*, no. 333 (hb. Gr.). Further distrib. S. United States, Mex., W. Ind., S. Am.

## SIMARUBACEAE.

## CASTELA, Turp.

*C. GALAPAGEIA*, Hook. f. (3), 229, & (4), 262; Rob. & Greenm. (1), 145. *C. galapageja*, Anderss. (1), 243, & (2), 106. *C. Galapagei*, Engl. & Prantl, Nat. Pflanzenf. iii. Ab. 4, 219.

This species, like *Euphorbia viminea* and several other Galapageian plants, shows pronounced formal differences on the different islands, thus:

Forma typica, inarmata; foliis lineari-lanceolatis acutis. — CHATHAM ISL.: *Darwin*; *Baur*?

Forma *albemarlensis*, inarmata vel aculeis parvis gracilibusque armatis; foliis oblongis obtusis mucronatis, 1.5–3.4 cm. longis, saepissime dentibus 1–2 parvis lateralibus instructis, supra haud lucidis. — ALBEMARLE ISL.: southern part, *Baur*, no. 45 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 156 (hb. Gr.), 924 (hb. Gr.), the latter showing the hitherto undescribed fruit to be obovoid, 12 mm. long, 9 mm. thick, very smooth and shining.

Forma *bindloensis*, inarmata; foliis integerrimis, anguste obovatis, rotundatis vel mucronulatis, 1–1.6 cm. longis, supra haud lucidis. — BINDLOE ISL.: *Baur*, no. 43 (hb. Gr.).

Forma *carolensis*, spinis brevibus robustioribus armata; foliis spatulatis basi manifeste attenuatis, demum supra valde lucidis 2–2.5 cm.



longis. — CHARLES ISL.: *Snodgrass & Heller*, no. 452 (hb. Gr.); *Baur*, no. 41 (hb. Gr.), and (?) *Baur*, no. 42 (hb. Gr.).

Forma *duncanensis*, inarmata; foliis anguste lanceolatis, base apiceque acutis. — DUNCAN ISL.: *Baur*, no. 47 (hb. Gr.). Perhaps only a young form.

Forma *jacobensis*, spinis perbrevibus armata; foliis late oblongis, integerrimis, basi apiceque rotundatis mucronatis supra lucidis et transverse rugulosis 1-1.3 cm. longis. — JAMES ISL.: a shrub 3 to 6 dm. high, in sand near beach, James Bay, *Snodgrass & Heller*, no. 364 (hb. Gr.).

Forma *jervensis*, spinis brevibus gracilibusque armata; foliis late oblongis integerrimis 1.7 cm. longis apice rotundatis margine valde revolutis supra haud lucidis. — JERVIS ISL.: *Baur*, no. 46 (hb. Gr.).

These forms possess, as will be seen from the above brief characters, rather striking differences. It is, however, very difficult to tell how much of this variation is due to permanent divergence of character and how much to individual environment and age. The species as a whole is very near *C. Nicholsonii*, Hook., but the branches do not exhibit the tendency to induration at the tip so conspicuous in the species just mentioned. *C. galapageia* was also collected by Habel acc. to Hemsl. in litt.

## BURSERACEAE.

### BURSER, L.

B. GRAVEOLENS, Trian. & Planch. Ann. Sci. Nat. ser. 5, xiv. 303 (1872); Engl. in DC. Monogr. iv. 49. *Elaphrium graveolens*, HBK. Nov. Gen. & Sp. vii. 31 (1825). *E. Tucamaco*, Tul. Ann. Sci. Nat. ser. 3, vi. 368 (1846). *Spondias Edmonstonei*, Hook. f. (3), 230; Anderss. (1), 243, & (2), 106; Rob. & Greenm. (1), 145. *Guaiacum*, Baur, Am. Nat. xxv. 220. — GALAPAGOS IDS.: *Goodridge* (hb. Gr.); *Habel*. ABINGDON ISL.: common, large, extending from the beach to 350 m. alt., *Snodgrass & Heller*, no. 809a (hb. Gr.). ALBEMARLE ISL.: *Macrae*; southern part, *Baur*, no. 58 (hb. Gr.); Elizabeth Bay, abundant on the north shore, *Snodgrass & Heller*, no. 259 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 21 (hb. Gr.); mountain east of Tagus Cove, *Snodgrass & Heller*, no. 227 (hb. Gr.). BARRINGTON ISL.: small and leafless, 28 May, acc. to Mr. Heller. CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c. CHATHAM ISL.: rather common, acc. to Mr. Heller. HOOD ISL.: scattered and rather small, acc. to Mr. Heller. INDEFATIGABLE ISL.: *Steindachner* in hb. Vienna Mus., acc. to Engl. l. c.; common on the north coast, acc. to Mr. Heller. JAMES

ISL.: James Bay, abundant, acc. to Mr. Heller. NARBOROUGH ISL.: southern part, common, *Snodgrass & Heller*, no. 340 (hb. Gr.). TOWER ISL.: common, 3 to 5 m. high, acc. to Mr. Heller. Further distrib. Peru to U. S. Colombia, Mex., W. Ind. This is the Palo Santo of the Galapagos Islands.

*B. malacophylla*, nov. sp. *B. graveolenti* affinis; ramis crassis lignosis fistulosis a cortice griseo-brunneo tectis apice foliosis; foliis 7-9-foliolatis ubique molliter tomentosis, petiolo gracili 2-3 cm. longo, rachide alato 4-5 cm. longo, aliis inter jugis inferioribus paulo dilatatis sub jugo supremo in auriculis rotundatis ampliatis, foliolis ovato-oblongis crenatis 2-3 cm. longis basi obliquis apice rotundatis; pedunculis fructiferis 3 vel pluribus 9 cm. longis simplicibus vel paulo ramosis; capsulis ovoideis compressis glabris 1.2 cm. longis 8 mm. latis. — SEYMOUR ISL.: south, abundant, May, 1899, *Snodgrass & Heller*, no. 596 (hb. Gr.). Endemic. PLATE 1, FIG. 2. A Palo Santo of North Seymour Isl., entered in Mr. Heller's field notes as differing in foliage from the Palo Santo of the other islands, was probably this, although the only specimens received are labelled South Seymour.

## POLYGALACEAE.

### POLYGALA, L.

*P. Anderssonii*. *P. puberula*, Anderss. (1), 232, & (2), 100; Rob. & Greenm. (1), 145; not Gray. — INDEFATIGABLE ISL.: in dry places on the sides of the mountain, *Andersson*; south of Conway Bay, *Baur*, no. 13 (hb. Gr.). Endemic. This species is omitted from Professor Chodat's monograph. It is reduced by Mr. Bennett, Jour. Bot. xvii. 204, but as I think erroneously, to *P. galapageia*. It is noteworthy that both species occur upon the same island but no intergradation has been observed in the matter of pubescence.

*P. GALAPAGEIA*, Hook. f. (3), 233; Bennett, Jour. Bot. xvii. 204; Rob. & Greenm. (1), 145. *P. galapageja*, Anderss. (1), 232, & (2), 100, t. 10, f. 1. *P. galopagensis*, Chodat, Monogr. Polyg. 230 (1893). *P. chathamensis*, Anderss. (1), 232, & (2), 99, t. 10, f. 3. *P. insularis*, Rob. & Greenm. (1), 145, in part. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 844 (hb. Gr.). ALBEMARLE ISL.: *Mucrae*; eastern part, Cowley Bay, *Baur*, no. 12 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 142, 177 (both in hb. Gr.). BINDLOE ISL.: *Baur*, no. 10 (hb. Gr.); *Snodgrass & Heller*, no. 763 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson* (hb. Gr.); *Baur*, no. 11 (hb. Gr.).

CHATHAM ISL.: *Andersson*; southwest end, lower region, *Baur*, no. 9 (hb. Gr.); northern part, *Baur*, no. 7 (hb. Gr.); *Snodgrass & Heller*, no. 494 (hb. Gr.). INDEFATIGABLE ISL.: Conway Bay, *Baur*, no. 4 (hb. Gr.); northern part, *Snodgrass & Heller*, no. 668 (hb. Gr.). JERVIS ISL.: *Baur*, no. 6 (hb. Gr.). Endemic.

Var. *insularis*. *P. obovata*, Hook. f. (3), 233; *Anderss.* (1), 231, & (2), 99, t. 10, f. 2; *Rob. & Greenm.* (1), 146; not *St. Hil.* *P. insularis*, *Bennett*, Jour. Bot. xvii. 204 (1879); *Rob. & Greenm.* (1), 146, in part. — *Folii latoribus, obovato-oblongatis vel obovatis, crassioribus; floribus minoribus, racemis brevibus.* — GALAPAGOS IDS.: *Cuming*, no. 103, acc. to *Bennett*, l. c.; *Mr. Brace* (hb. Gr.). ALBEMARLE ISL.: *Macrae*, acc. to *Bennett*, l. c. CHARLES ISL.: *Edmonston*; *Andersson*; *Baur*. CHATHAM ISL.: *Darwin*; *Andersson* (hb. Gr.). JERVIS ISL.: *Baur*, no. 8 (hb. Gr.). Endemic. None of the distinctions between this and *P. galapageia*, given by *Bennett*, hold in the series of specimens now at hand. *Andersson* names two foliar forms (*latifolia* and *angustifolia*).

## EUPHORBIACEAE.

ACALYPHA, L.<sup>1</sup>

*A. Adamsii*, nov. sp.; perennis; caule tenui plus minusve repente copiose ramoso fusco griseo-tomentuloso; indumento e pilis brevibus albidis recurvatis sed in apice caulis plus minusve longioribus et flavescens compositis; foliis late ovatis vel suborbicularibus crenatis

<sup>1</sup> With the material now at hand it is impossible to accept the treatment of *Acalypha* given by *Mueller Argovensis*, who reduces all Galapageian forms to varieties of one polymorphous species. We have here to do not only with annuals and perennials, with erect and prostrate habit, and with leaves of very different size, covered with pubescence varying from velvety and non-glandular to hirsute or glandular, but accompanying these considerable differences are others in the inflorescence sufficiently striking and constant to be classed as specific distinctions. The following key will suggest the leading diagnostic features.

## SYNOPSIS OF THE GALAPAGEIAN ACALYPHAS.

\* Involucre of the ♀ flowers 3-parted.

1. *A. flaccida*, Hook. f.

\*\* Involucre irregularly 9-toothed: leaves large, 4 to 6 cm. long: floriferous part of the ♂ inflorescence 5 cm. in length, the peduncles very short.

2. *A. baurii*, *Rob. & Greenm.*

\*\*\* Involucre irregularly 7-9-toothed: leaves rarely over 3 cm. in length: floriferous part of ♂ inflorescence 1 mm. to 2 cm. long, commonly equalled

obtusis vel rotundatis 6-20 mm. longis 5-14 mm. latis supra adpresse pilosis subtus sordide pubescentibus et minute albo-punctatis a basi rotundato nec cordato 5-nerviis petiolo 6-19 mm. longo tomentuloso; spicis brevibus axillaribus parte mascula perbrevis 1-3 mm. longa in pedunculo filiforme 6-9 mm. longo terminali; involucris foemineis 1-3 in basi pedunculi sessilibus 3-floris ad mediam partem 7-partitis; dentibus

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and often much exceeded by the peduncle which often bears below 1 to 3 or more ♀ involucre.

← Leaves tomentose.

↔ Indumentum of the stem non-glandular.

= Terminal (chiefly ♀) spike well developed.

3. *A. SERICEA*, Anderss.

= = Pistillate involucre scattered chiefly at or near the base of lateral spikes: no well developed terminal spike.

4. *A. VELUTINA*, Hook. f.

↔ ↔ Indumentum of the stem glandular.

5. *A. STROBILIFERA*, Hook. f.

+ ← Leaves puberulent or pubescent.

↔ Terminal spike developed.

= Involucre glandular-pubescent.

6. *A. RENIFORMIS*, Hook. f.

= = Involucre hirsute with long non-glandular as well as shorter glandular hairs.

7. *A. SPICATA*, Anderss.

↔ ↔ No terminal spike.

= Prostrate perennials branching from the base.

a. Pistillate involucre 1 to 3, sessile at the very base of the rachis.

1. Leaves about equalling the petioles, cordate, reniform.

8. *A. DIFFUSA*, Anderss.

2. Leaves about equalling the petioles, suborbicular, rounded at the base, obtuse or rounded at the apex.

9. *A. ADAMSII*, Robinson.

3. Leaves considerably shorter than the petioles, acutish.

10. *A. ALBEMARLENSIS*, Robinson.

b. Pistillate involucre borne somewhat above the base of the rachis.

11. *A. PARVULA*, Hook. f.

= = Erect annuals.

a. Leaves cordate, 8 to 12 mm. long, obtuse or rounded: stem hirsute and glandular.

12. *A. CORDIFOLIA*, Hook. f.

b. Leaves 2 to 4 cm. long, rhombic-ovate, subacute, somewhat narrowed to a scarcely or not at all cordate base; stem glandular-puberulent.

13. *A. CHATHAMENSIS*, Robinson.

oblongis obtusiusculis pubescentibus. — *A. parvula*, var. *procumbens*, Rob. & Greenm. (1), 148, in part. — CHATHAM ISL.: southwest end, middle region, June, 1891, *Dr. George Baur*, no. 282 (hb. Gr.). Dedicated to the late C. F. Adams of the University of Illinois, the companion and efficient assistant of Dr. Baur upon his voyage to the Galapagos Islands. Endemic.

*A. albemarlensis*, nov. sp., gracilis sed basi ramoso lignescenti; ramis longis teretibus subsimplicibus purpurascentibus uno solo latere pubescentibus; indumento e pilis albidis brevissimis recurvatis et aliis longioribus rectis divergentibus composito; foliis parvis ovatis acutiusculis crenatis cordatis 7–10 mm. longis supra pilosis subtus pallidioribus creberrime punctatis et in nervis hirsutulis; petiolo filiforme flexuoso hirsutulo 9–17 mm. longo; spicis axillaribus parte mascula tenui gracili 6 mm. longa in pedunculo filiforme flexuoso 10–14 mm. longo; involucri foemineis in basi pedunculi saepius solitariis sessilibus glanduloso-pubescentibus 2–3-floris fere ad mediam partem 7-partitis; segmentis ovatis obtusiusculis. — ALBEMARLE ISL.: Tagus Cove, alt. 1220 m., 15 June, 1899, *Snodgrass & Heller*, no. 885 (hb. Gr.). Endemic.

*A. BAURII*, Rob. & Greenm. (1), 144, 148. — CHATHAM ISL.: southwest end, middle region, *Baur*, no. 285 (hb. Gr.). Endemic.

*A. chathamensis*, nov. sp., annua erecta in parte superiori ramosa; caule tereti fuscescente dense glanduloso-tomentello; foliis ovatis tenuibus obtusiusculis basi rotundatis vel leviter angustatis grosse supra basi crenatis in pagina superiori sparse pubescentibus subtus pallidioribus sub lente squamosis in nervis pubescentibus 2.5–4 cm. longis 2–3 cm. latis; petiolo 2.5–3.5 cm. longo sordide glanduloso-piloso; spicis axillaribus ad 4–5 cm. longis; parte mascula terminali 2 mm. crassa 10–15 mm. longa supra densa infra laxiori; rachide filiforme glanduloso-puberulo involucros foemineos 1–5 glanduloso-pubescentes 2–3-floros ad mediam partem in dentes 6–7 inaequales deltoideos acutiusculos glanduloso-ciliatos sectos plus minusve supra basi gerente. — CHATHAM ISL.: May, 1899, *Snodgrass & Heller*, no. 541 (hb. Gr.), and (?) no. 540 (hb. Gr.). Endemic.

*A. CORDIFOLIA*, Hook. f. (3), 186; Anderss. (1), 238, & (2), 103. *A. parvula*, var. *cordifolia*, Muell. Arg. in DC. Prodr. xv. pt. 2, 877 (1862), but surely not Rob. & Greenm. (1), 148. — CHARLES ISL.: *Darwin*. CHATHAM ISL.: *Andersson* fide ipsi l. c., but identity doubted. Endemic.

*A. DIFFUSA*, Anderss. (1), 240, & (2), 104, t. 14, f. 4; Rose (1),

137. — ALBEMARLE ISL.: in very sterile places, *Andersson* (hb. Gr.).  
CHATHAM ISL.: *A. Agassiz*, acc. to Rose, l. c. Endemic.

*A. FLACCIDA*, Hook. f. (3), 186; *Anderss.* (1), 238, & (2), 103.  
*A. parvula*, var. *flaccida*, Muell. Arg. in DC. Prodr. xv. pt. 2, 878  
(1862). — JAMES ISL.: *Darwin*. Endemic.

*A. PARVULA*, Hook. f. (3), 185; *Anderss.* (1), 240, & (2), 104.  
*A. parvula*, var. *genuina*, Muell. Arg. l. c. 878 (1862); *Rob. & Greenm.* (1), 148. — ALBEMARLE ISL.: *Macrae*; *Capt. King*, acc. to Muell. Arg. l. c.; Iguana Cove, *Snodgrass & Heller*, nos. 83 (hb. Gr.), 97 (hb. Gr.); Tagus Cove, not common, from beach to 1230 m. alt., *Snodgrass & Heller*, nos. 202 (hb. Gr.), 245? (hb. Gr.), 886 (hb. Gr.); southern portion, *Baur*, no. 281 (hb. Gr.). Endemic.

*A. RENIFORMIS*, Hook. f. (3), 187; *Anderss.* (1), 240, & (2), 104.  
*A. parvula*, var. *reniformis*, Muell. Arg. l. c. — CHARLES ISL.: *Darwin*. Endemic.

*A. SERICEA*, *Anderss.* (1), 238, & (2), 103, t. 14, f. 1. *A. parvula*, var. *pubescens*, Muell. Arg. l. c. 877, in part; *Rob. & Greenm.* (1), 148, in part. — ABINGDON ISL.: *Snodgrass & Heller*, no. 842 (hb. Gr.). ALBEMARLE ISL.: in stony places of lower region, *Andersson*. BIND-LOE ISL.: *Baur*, no. 277 (hb. Gr.); *Snodgrass & Heller*, no. 762 (hb. Gr.). Endemic. Ascribed to Chatham Isl. by *Anderss.* (1), 238, but apparently by clerical error, as Albemarle Isl. is substituted in his later work.

*A. SPICATA*, *Anderss.* (1), 239, (2), 104, t. 14, f. 3. *A. parvula*, var. *procumbens*, Muell. Arg. l. c. 878, in part. — CHARLES ISL.: *Baur*, no. 283 (hb. Gr.), identity doubtful. CHATHAM ISL.: in dry places of the lower region, *Andersson* (hb. Gr.). DUNCAN ISL.: *Baur*, no. 276 (hb. Gr.), identity doubtful. GARDNER ISL.: *Snodgrass & Heller*, no. 637 (hb. Gr.), identity doubtful. HOOD ISL.: *Snodgrass & Heller*, no. 723 (hb. Gr.), identity doubtful. JERVIS ISL.: *Baur*, no. 279 (hb. Gr.). Endemic.

*A. STROBILIFERA*, Hook. f. (3), 187; *Anderss.* (1), 238, & (2), 103.  
*A. parvula*, var. *strobilifera*, Muell. Arg. l. c. 877; *Rob. & Greenm.* (1), 148. — ALBEMARLE ISL.: eastern portion, Cowley Bay, *Baur*, no. 273 (hb. Gr.). CHATHAM ISL.: *Darwin*; in dry places of middle region, *Andersson*; northern part, *Baur*, no. 272 (hb. Gr.). Endemic.

*A. VELUTINA*, Hook. f. (3), 186; *Anderss.* (1), 237, & (2), 103, t. 14, f. 2. *A. parvula*, var. *pubescens*, Muell. Arg. l. c. 877, in part. —



CHARLES ISL.: *Darwin*; in arid places of the middle region, *Andersson* (hb. Gr.). CHATHAM ISL.: *Wood*, acc. to Muell. Arg. Endemic.

Var. MINOR, Hook. f. (3), 187; Anderss. (1), 238, & (2), 103. *A. parvula*, var. *pubescens*, Muell. Arg. l. c. 877, in part; Rob. & Greenm. (1), 148, in part. — CHARLES ISL.: *Darwin*; Cuevas Bay, *Baur*, no. 275 (hb. Gr.). Endemic.

A. sp. — *A. parvula*, var. *cordifolia*? Rob. & Greenm. (1), 148 (where by error referred to Jervis Isl.), not Muell. Arg. — BARRINGTON ISL.: *Baur*, no. 274 (hb. Gr.). Endemic.

A. sp. — BARRINGTON ISL.: *Snodgrass & Heller*, no. 472 (hb. Gr.). Endemic.

A. sp. — BARRINGTON ISL.: *Baur*, no. 280 (hb. Gr.). Endemic.

A. sp. — INDEFATIGABLE ISL.: south of Conway Bay, *Baur*, no. 278 (hb. Gr.). Endemic.

A. sp. — *A. parvula*, var. *flaccida*, Rob. & Greenm. (1), 148, not Muell. Arg. — DUNCAN ISL.: *Baur*, no. 284 (hb. Gr.).

#### CROTON, L.

C. SCOULERI, Hook. f. (3), 188; Anderss. (1), 242, & (2), 105; Rob. & Greenm. (1), 148. *C. Scouleri*, var. *genuinus*, Muell. Arg. in DC. Prodr. xv. pt. 2, 605 (1862) ? *C. flavens*, var., Caruel (1), 625. — GALAPAGOS IDS.: *Goodridge* (hb. Gr.); *Habel*. BARRINGTON ISL.: *Baur*, no. 265 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 785 (hb. Gr.), large-leaved form. CHARLES ISL.: *Snodgrass & Heller*, no. 453 (hb. Gr.), approaching var. *incanus*. CHATHAM ISL.: *Darwin*; northern part, *Baur*, without number (hb. Gr.); *Chierchia*? HOOD ISL.: *Baur*, no. 264 (hb. Gr.). JAMES ISL.: *Scouler*; *Douglas*; *Andersson*; James Bay, abundant on lava soil, small trees 2.5 to 4 m. high, *Snodgrass & Heller*, no. 386 (hb. Gr.). NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, nos. 330 (hb. Gr.), 352 (hb. Gr.). TOWER ISL.: *Baur*, without number (hb. Gr.), broad-leaved form.

Var. ALBESCENS, Muell. Arg. l. c. *C. albescens*, Anderss. (1), 242, & (2), 105. *C. incanus*, Anderss. (1), 243, & (2), 106; Rob. & Greenm. (1), 148; not Kunth. — ALBEMARLE ISL.: *Andersson*; mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 292 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 226 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 266 (hb. Gr.). CHARLES ISL.: *Andersson*; *A. Agassiz* (hb. U. S. Nat. Mus.); *Baur*, no. 267 (hb. Gr.). JAMES ISL.: *Andersson* (hb. Gr.). Endemic.

Forma MICROPHYLLUS, Muell. Arg. l. c. *C. incanus*, var. *microphylla*, Anderss. (1), 243, & (2), 106. — ALBEMARLE ISL.: *Andersson*. Endemic.

Var. BREVIFOLIUS, Muell. Arg. l. c. *C. brevifolius*, Anderss. (1), 241, & (2), 105. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 47 (hb. Gr.). CHARLES ISL.: *Andersson*. CULPEPPER ISL.: *Snodgrass & Heller*, no. 4 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 686 (hb. Gr.), passing to typical form. GARDNER ISL.: *Snodgrass & Heller*, no. 641 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 572 (hb. Gr.). WENMAN ISL.: *Snodgrass & Heller*, no. 6 (hb. Gr.). Endemic.

Var. GRANDIFOLIUS, Muell. Arg. l. c. *C. xalapensis*, Hook. f. (3), 188; Anderss. (1), 241, & (2), 105; ? Rob. & Greenm. (1), 148; not HBK. — ABINGDON ISL.: *Snodgrass & Heller* no. 822 (hb. Gr.). CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus., & hb. Gr.). CHATHAM ISL.: southwest end, upper region, *Baur*, no. 269 (hb. Gr.). JAMES ISL.: *Darwin*. TOWER ISL.: *Snodgrass & Heller*, no. 802 (hb. Gr.).

Var. MACRAEI, Muell. Arg. l. c. *C. Macraei*, Hook. f. (3), 188; Anderss. (1), 243, & (2), 106; Rob. & Greenm. (1), 148. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: *Macraei*; *King*, acc. to Muell. Arg. l. c.; eastern part, Cowley Bay, *Baur*, no. 270 (hb. Gr.); Tagus Cove, most abundant bush from beach to 1230 m. alt., *Snodgrass & Heller*, nos. 153 (hb. Gr.), 189 (hb. Gr.). JAMES ISL.: in woods, *Andersson*; Orchilla Bay, *Baur*, no. 271 (hb. Gr.). Endemic.

#### EUPHORBIA, L.

E. AMPLEXICAULIS, Hook. f. (3), 183; Anderss. (1), 235, & (2), 101; Boiss. in DC. Prodr. xv. pt. 2, 13; Rob. & Greenm. (1), 149. — GALAPAGOS IDS.: *Habel*. BINDLOE ISL.: *Snodgrass & Heller*, no. 771 (hb. Gr.). CHATHAM ISL.: *Darwin*. SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 582 (hb. Gr.). TOWER ISL.: *Baur*, no. 255 (hb. Gr.); *Snodgrass & Heller*, no. 795, (hb. Gr.). WENMAN ISL.: *Snodgrass & Heller*, no. 11 (hb. Gr.). Endemic.

E. APICULATA, Anderss. (1), 234, & (2), 101; Boiss. in DC. Prodr. xv. pt. 2, 17. — CHATHAM ISL.: near shore, *Andersson*. Endemic.

E. ARTICULATA, Anderss. (1), 236, & (2), 102, t. 12, f. 2; Boiss. l. c. 17; Rose (1), 137; Rob. & Greenm. (1), 148. — ABINGDON ISL.: *Snodgrass & Heller*, no. 834 (hb. Gr.). ALBEMARLE ISL.: eastern part, Cowley Bay, *Baur*, no. 258 (hb. Gr.). Elizabeth Bay,

*Snodgrass & Heller*, no. 276 (hb. Gr.); Tagus Cove, common near beach and up to 185 m. alt., *Snodgrass & Heller*, nos. 149 (hb. Gr.), 181 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 257 (hb. Gr.). CHARLES ISL.: Cormorant Bay, *Baur*, no. 259 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *A. Agassiz*, acc. to Rose, l. c. INDEFATIGABLE ISL.: *Andersson*. JAMES ISL.: Orchilla Bay, *Baur*, no. 260 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 585 (hb. Gr.). Endemic.

*E. DIFFUSA*, Hook. f. (3), 184; *Anderss.* (1), 234, & (2), 101; Boiss. in DC. Prodr. xv. pt. 2, 17; Rob. & Greenm. (1), 148. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: *Cuming*; *Macrae*; *Andersson*. INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 650 (hb. Gr.). JERVIS ISL.: *Baur*, no. 243 (hb. Gr.). Endemic.

*E. FLABELLARIIS*, *Anderss.* acc. to Boiss. in DC. Prodr. xv. pt. 2, 17 (1862); Rob. & Greenm. (1), 148. *E. maculata*, Hook. f. (3), 182; *Anderss.* (1), 233, & (2), 101; not L. — ABINGDON ISL.: *Snodgrass & Heller*, no. 829 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 485 (hb. Gr.), identity doubtful. CHARLES ISL.: *Darwin*. GARDNER ISL.: *Snodgrass & Heller*, no. 631 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; south of Conway Bay, *Baur*, no. 256 (hb. Gr.). JAMES ISL.: James Bay, common on lava rocks near sand beach, *Snodgrass & Heller*, no. 383 (hb. Gr.), identity doubtful. SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 562 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 796 (hb. Gr.). Endemic.

*E. GALAPAGEIA*, Rob. & Greenm. (1), 144, 148. — CHARLES ISL.: *Baur*, no. 261 (hb. Gr.). Endemic.

*E. nesiotica*, nov. sp., verisimiliter annua gracilis glaberrima glaucescens; caulibus pluribus flexuosis dichotomis procumbentibus teretibus laevibus; foliis oppositis oblongis plus minusve denticulatis glabris obsolete venulosis apice rotundatis basi obliquis obtusis breviter petiolatis quam internodia valde brevioribus patentibus; involucris axillaribus breviter pedunculatis ad nodos superiores solitariis vel oppositis minimis turbinatis; lobis lanceolato-deltoides plus minusve ciliatis; glandulis quatuor sessilibus transverse oblongis atroviolaceis; capsula nutante crassiore quam longa straminea-brunnea glabra laeve; coccis obtuse carinatis; stylis brevibus ad partem mediam bifidis. — SEYMOUR ISL.: south, May, 1899, *Snodgrass & Heller*, no. 589 (hb. Gr.). Endemic. Leaves 7 mm. long, half as broad; involucre 1 mm. long, capsule 1.4 mm. long, 2 mm. thick. PLATE 2, FIG. 5.

*E. NUMMULARIA*, Hook. f. (3), 183; Anderss. (1), 235, & (2), 101, t. 12, f. 1; Boiss. in DC. Prodr. xv. pt. 2, 16, & Icon. Euphorb. t. 5; Rose (1), 137; Rob. & Greenm. (1), 148. — CHATHAM ISL.: *Darwin*; covering large volcanic rocks near the shore, *Andersson* (hb. Gr.); *A. Agassiz*; southwest end, lower region, *Baur*, no. 253 (hb. Gr.); northern part, *Baur*, no. 254 (hb. Gr.); *Snodgrass & Heller*, no. 493 (hb. Gr.). Endemic.

Var. *GLABRA*, Rob. & Greenm. (1), 144, 148. — CHARLES ISL.: Cuevas Bay, *Baur*, no. 386 (hb. Gr.). Endemic.

*E. PILULIFERA*, L. Amoen. Acad. iii. 115 (1756); Hook. f. (3), 182; Anderss. (1), 233, & (2), 100; Boiss. in DC. Prodr. xv. pt. 2, 21. — CHARLES ISL.: cultivated ground, middle region, *Andersson*; *Lee* (hb. U. S. Nat. Mus.); *Snodgrass & Heller*, no. 439 (hb. Gr.). CHATHAM ISL.: *Snodgrass & Heller*, no. 519 (hb. Gr.). JAMES ISL.: *Darwin*. Distrib. general in warm countries.

*E. PUNCTULATA*, Anderss. (1), 235, & (2), 102; Boiss. l. c. 17; Rob. & Greenm. (1), 148. — ALBEMARLE ISL.: in very dry places, *Andersson*. DUNCAN ISL.: *Baur*, no. 262 (hb. Gr.). HOOD ISL.: *Baur*, no. 263 (hb. Gr.). Endemic.

*E. RECURVA*, Hook. f. (3), 182; Anderss. (1), 234, & (2), 101; Boiss. in DC. Prodr. xv. pt. 2, 16. — CHATHAM ISL.: *Darwin*; in lower stony region, *Andersson* (hb. Gr.). Endemic.

*E. VIMINEA*, Hook. f. (3), 184; Anderss. (1), 235, & (2), 101, t. 12, f. 3; Boiss. in DC. Prodr. xv. pt. 2, 17; Rob. & Greenm. (1), 136, 138, 148. *E. viminea*, forma *albemarlensis* (typica), Rob. & Greenm. (1), 138. — ALBEMARLE ISL.: *Macrae*; eastern part, Cowley Bay, *Baur*, no. 252 (hb. Gr.); southern portion, *Baur*, no. 251 (hb. Gr.); Elizabeth Bay, *Snodgrass & Heller*, no. 277 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 164 (hb. Gr.). Endemic.

Forma *BARRINGTONENSIS*, Rob. & Greenm. (1), 139. — BARRINGTON ISL.: *Baur*, no. 244 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 248 (hb. Gr.); *Snodgrass & Heller*, no. 761 (hb. Gr.). Endemic.

Forma *CAROLENSIS*, Rob. & Greenm. (1), 139. — CHARLES ISL.: *Andersson* (hb. Gr.). Endemic.

Forma *CASTELLANA*, Rob. & Greenm. (1), 138. — TOWER ISL.: *Baur*, no. 247 (hb. Gr.); *Snodgrass & Heller*, no. 805 (hb. Gr.). Endemic.

Forma *CHATHAMENSIS*, Rob. & Greenm. (1), 138. — CHATHAM ISL.: *Andersson*; *Baur*, no. 245 (hb. Gr.). Endemic.

Forma JACOBENSIS, Rob. & Greenm. (1), 138. — JAMES ISL.: Orchilla Bay, *Baur*, no. 249 (hb. Gr.). Endemic.

Forma JERVENSIS, Rob. & Greenm. (1), 139. — JERVIS ISL.: *Baur*, no. 250 (hb. Gr.). Endemic.

Var. ABINGDONENSIS, Rob. & Greenm. (1), 139. — ABINGDON ISL.: *Baur*, no. 246 (hb. Gr.). Endemic.

For a discussion of these forms see Rob. & Greenm. (1), 138, 139. *E. viminea* was collected on the Galapagos Ids. also by *Habel*.

*E. sp. aff. E. articulata*, Anderss. — BINDLOE ISL.: *Snodgrass & Heller*, no. 780 (hb. Gr.), sterile. Leaves narrowly ovate-oblong from a cordate base, otherwise much like *E. articulata*, which in its typical form grows upon the same island.

*E. sp.* Anderss. (1), 237, & (2), 102. — CHATHAM ISL.: *Andersson*.

*E. sp.* Hook. f. (3), 185; Anderss. (1), 237, & (2), 102. — CHARLES ISL.: *Darwin*.

#### HIPPOMANE, L.

*H. MANCINELLA*, L. Sp. 1191 (1753); Anderss. (1), 237, & (2), 103. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: Elizabeth Bay, *Snodgrass & Heller*, no. 279 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 49 (hb. Gr.). CHATHAM ISL.: *Andersson*. Further distrib. S. United States, Mex., W. Ind., Northwestern S. Am.

#### MANIHOT, Adans.

*M. UTILISSIMA*, Pohl. Pl. Bras. Ic. i. 32, t. 24 (1827); Muell. Arg. in DC. Prodr. xv. pt. 2, 1064; Caruel (1), 625. — CHATHAM ISL.: *Chierchia*. Widely distrib. in tropical countries.

#### PHYLLANTHUS, L.

*P. CAROLINENSIS*, Walt. Fl. Car. 228, as *caroliniensis* (1788); Caruel (1), 625; Rob. & Greenm. (1), 148. *P. obovatus*, Muhl. ex Willd. Sp. iv. 574 (1805); Hook. f. (3), 185; Anderss. (1), 237, & (2), 103. — ALBEMARLE ISL.: *Andersson*; Iguana Cove, *Snodgrass & Heller*, no. 106 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 194 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson* (hb. Gr.). CHATHAM ISL.: *Chierchia*; southwest end, middle region, *Baur*, no. 268 (hb. Gr.). JAMES ISL.: James Bay, common on lava rocks, *Snodgrass & Heller*, no. 385 (hb. Gr.). NARBOROUGH ISL.: northern part, *Snodgrass &*

*Heller*, no. 296 (hb. Gr.); southern part, *Snodgrass & Heller*, no. 332 (hb. Gr.). Further distrib. northern S. Am., Mex., W. Ind., southern and central U. S.

#### RICINUS, L.

*R. COMMUNIS*, L. Sp. 1007 (1753); Anderss. (1) 241, & (2), 105. — CHARLES ISL.: in cultivated ground, *Andersson*. Widely distrib. in warm countries.

#### CALLITRICHACEAE.

##### CALLITRICHE, L.

*C. sp. Wolf*, (1), 284. — CHARLES ISL.: in brook near hacienda acc. to Wolf. l. c.

#### CELASTRACEAE.

##### MAYTENUS, Feuill.

*M. OBOVATA*, Hook. f. (3), 230; Anderss. (1), 233, & (2), 100; Rob. & Greenm. (1), 145. — ALBEMARLE ISL.: southern part, *Baur*, no. 49 (hb. Gr.); Elizabeth Bay, on lava fields near beach, *Snodgrass & Heller*, no. 936 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 66 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 158 (hb. Gr.), 877 (hb. Gr.). BARRINGTON ISL.: *Baur*, no. 52 (hb. Gr.). CHARLES ISL.: *Andersson*; *Baur*. CHATHAM ISL.: *Darwin*; in woods of lower region, *Andersson*; southwest end, middle region, *Baur*, no. 48½ (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 685 (hb. Gr.). HOOD ISL.: *Baur*, no. 51 (hb. Gr.). JAMES ISL.: James Bay, scattered along the sandy beach, *Snodgrass & Heller*, no. 371 (hb. Gr.). JERVIS ISL.: *Baur*. NARBOROUGH ISL.: common acc. to field notes of Mr. Heller. SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 597 (hb. Gr.). Endemic.

#### SAPINDACEAE.

##### CARDIOSPERMUM, L.

*C. CORINDUM*, L. Sp. ed. 2, 526 (1762); Radlk. Sitzungsab. Kgl. Bayer. Akad. 1878, p. 261; Rob. & Greenm. (1), 145, in part (as to pl. Chatham). *C. molle*, HBK. Nov. Gen. & Sp. v. 103 (1821); Hook. f. (3), 231; Anderss. (1), 231, & (2), 99; Caruel (1), 623. — ALBEMARLE ISL.: *Andersson*; mountain north of Elizabeth Bay, *Snod-*



*grass & Heller*, no. 281 (hb. Gr.). CHARLES ISL.: *Andersson*. CHATHAM ISL.: *Darwin*; *Andersson* (hb. Gr.); *Chierchia*; southwest end, lower region, *Baur*, no. 60 (hb. Gr.); southwest end, upper region, *Baur*, no. 59 (hb. Gr.); *Snodgrass & Heller*, no. 512 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*. JAMES ISL.: *Andersson*; common about James Bay, *Snodgrass & Heller*, no. 359 (hb. Gr.). WENMAN ISL.: *Snodgrass & Heller*, no. 8 (hb. Gr.). Further distrib. trop. S. Am., Mex., southwestern U. S.

C. GALAPAGEIUM, Rob. & Greenm. Proc. Am. Acad. xxxii. 38 (1896). *C. Corindum*, Rob. & Greenm. (1), 145, in part (as to pl. Albemarle), not L. — ALBEMARLE ISL.: southern part, *Baur*, no. 61 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 675 (hb. Gr.). Endemic.

## DODONAEA, L.

D. VISCOSA, Jacq. Enum. Pl. Carib. 19 (1762); L. Mant. ii. 228; Rob. & Greenm. (1), 145. Forma typica. — ALBEMARLE ISL.: eastern part, Cowley Bay, *Baur*, no. 62 (hb. Gr.); southern part, *Baur*, no. 63 (hb. Gr.). Further distrib. general in warm countries.

Var. SPATHULATA, Benth. Fl. Aust. i. 476 (1863). — ALBEMARLE ISL.: Tagus Cove, *Snodgrass & Heller*, nos. 876 (hb. Gr.), 904 (hb. Gr.); mountain east of Tagus Cove, *Snodgrass & Heller*, no. 244 (hb. Gr.). Specimen imperfect and doubtful, but clearly representing a very different form of the species from those collected on the same island by *Baur*. Further distrib. general in warm countries.

## SAPINDUS, L.

S. SAPONARIA, L. Sp. 367 (1753); Sarg. Silv. ii. 69, t. 74, 75. "S. near *S. acuminatus*, Willd." Rob. & Greenm. (1), 145. — ALBEMARLE ISL.: southern part, *Baur*, no. 57 (hb. Gr.). Form with leaflets glabrous beneath. Further distrib. of species trop. Am., Mex., W. Ind., south-eastern U. S.

## RHAMNACEAE.

## DISCARIA, Hook.

D. PAUCIFLORA, Hook. f. (3), 229; Anderss. (1), 233, & (2), 100; Rob. & Greenm. (1), 145. D. sp. Rob. & Greenm. (1), 145. — ALBEMARLE ISL.: *Darwin*; *Baur*; common about Elizabeth Bay, acc. to Mr. Heller; forming dense thickets, Tagus Cove, *Snodgrass & Heller*, no. 143 (hb. Gr.). BARRINGTON ISL.: *Baur*, no. 55 (hb. Gr.); abundant,

*Snodgrass & Heller*, no. 478 (hb. Gr.). CHARLES ISL.: from this island Professor Caruel (1), 624, reports a spiny shrub collected by Chierchia and supposed to belong to the *Rhamnaceae*. It may well have been this species. CHATHAM ISL.: woods near shore, *Andersson*; southwest end, lower region, *Baur*. DUNCAN ISL.; not common, acc. to Mr. Heller. HOOD ISL.: *Baur*, (hb. Gr.), juvenile form with serrate leaves. INDEFATIGABLE ISL.: north coast, acc. to Mr. Heller. JAMES ISL.: James Bay, near beach in sand, acc. to Mr. Heller. SEYMOUR ISL.: north, uncommon, acc. to Mr. Heller; south, abundant, *Snodgrass & Heller*, no. 608 (hb. Gr.). Further distrib. collected by Dr. Baur at Posorja on the Gulf of Guayaquil, Ecuador, where perhaps introduced from the islands.

## VITACEAE.

## Cissus, L.

C. SICYOIDES, L. Syst. Nat. ed. 10, 897 (1760). *Vitis sicyoides*, Miq. Ann. Mus. Bot. Lugd. Bat. i. 83 (1863-1864). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 26, 45, 89, 101 (all in hb. Gr.). BINDLOE ISL.: common near the shore, acc. to field notes of Mr. Heller. CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.). NARBOROUGH ISL.: bordering beaches, acc. to Mr. Heller. Further distrib. Mex., W. Ind., S. Am., southward to Paraguay.

## Vitis, L.

V. VINIFERA, L. Sp. 202 (1753); Caruel (1), 623. — CHARLES ISL.: in sterile state, *Chierchia* acc. to Caruel. Probably introduced through cultivation. Further distrib. Old World.

## TILIACEAE.

## CORCHORUS, L.

C. PILOBOLUS, Link, Enum. Hort. Berol. ii. 72 (1822); Jacq. Ecl. t. 163 as *C. bullatus*. — GALAPAGOS IDS.: *Habel?* ALBEMARLE ISL.: *Snodgrass & Heller*, no. 90. GARDNER ISL.: *Snodgrass & Heller*, no. 645 (hb. Gr.). Further distrib. trop. S. Am., W. Ind., Mex.

## TRIUMFETTA, L.

T. SEMITRILOBA, Jacq. Enum. Pl. Carib. 22 (1762), Stirp. Am. 147, & Hort. Vindob. iii. t. 16. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 69, 70, 107, 858, 859 (all in hb. Gr.). Further distrib. general in trop. and subtrop. Am.

## MALVACEAE.

## ABUTILON, Gaertn.

A. ANDERSSONIANUM, Garcke in Anderss. (1), 230, & (2), 98, t. 15, f. 1. — ABINGDON ISL.: *Snodgrass & Heller*, no. 847 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 479 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 788 (hb. Gr.). CHARLES ISL.: dry places, lower region, *Andersson*. CHATHAM ISL.: dry places, lower region, *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 507 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 702 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 632 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 662 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 794 (hb. Gr.). Endemic. The forms on Duncan and Gardner Ids. are smoother and greener than the others.

A. DEPAUPERATUM, Anderss. (1), 230, & (2), 98. *A. Anderssonianum*, Rob. & Greenm. (1), 145, not Garcke. *Sida depauperata*, Hook. f. (3), 232. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 76, 82 (both in hb. Gr.). BARRINGTON ISL.: *Baur*, no. 16 (hb. Gr.), determined from character. CHARLES ISL.: *Darwin*. Endemic. Perhaps only a dry soil form of *A. Anderssonianum*.

## ANODA, Cav.

A. HASTATA, Cav. Diss. i. 38, t. 11, f. 2 (1790). *A. acerifolia*, DC. Prodr. i. 459 (1824); Rob. & Greenm. (1), 145, where by error ascribed to Chatham Island. — CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.); *Baur*, no. 20 (hb. Gr.); *Snodgrass & Heller*, no. 449 (hb. Gr.). Further distrib. southern U. S., Mex. to Chili.

## BASTARDIA, HBK.

B. VISCOSA, HBK. Nov. Gen. & Sp. v. 256 (1821); L'Her. Stirp. t. 53 bis; E. G. Baker, Jour. Bot. xxxi. 68. *B. guayaquilensis*, Turcz. Bull. Soc. Nat. Mosc. 1858, p. 201. *Sida viscosa*, L. Syst. ed. 10, 1145 (1760). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 105 (hb. Gr.). CHATHAM ISL.: *Snodgrass & Heller*, no. 533 (hb. Gr.). Further distrib. western S. Am., Mex., W. Ind.

## GOSSYPIMUM, L.

G. BARBADENSE, L. Sp. 693 (1753). *G. purpurascens*, Hook. f. (3), 231; Anderss. (1), 228, & (2), 97; Rose (1), 136; not Poir.

*G. Klotzschianum*, Rob. & Greenm. (1), 145, not Anderss. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 828 (hb. Gr.); ALBEMARLE ISL.: *Baur*; Iguana Cove, *Snodgrass & Heller*, nos. 46 (hb. Gr.), 854 (hb. Gr.). BARRINGTON ISL.: *Baur*, no. 24 (hb. Gr.). CHARLES ISL.: *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 402 (hb. Gr.). CHATHAM ISL.: *Darwin*; southwest end lower region, *Baur*, no. 22 (hb. Gr.); northern part, *Baur*, no. 25 (hb. Gr.). DUNCAN ISL.: *A. Agassiz*. GARDNER ISL.: *Snodgrass & Heller*, no. 633 (hb. Gr.). HOOD ISL.: *Baur*, no. 21 (hb. Gr.); *Snodgrass & Heller*, no. 752 (hb. Gr.). JAMES ISL.: *Darwin*. SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 599 (hb. Gr.). Further distrib. general in tropics.

G. KLOTZSCHIANUM, Anderss. (1), 228, & (2), 97. — GALAPAGOS IDS.: *Edmonston* (hb. Gr.). ALBEMARLE ISL.: *Andersson*. BINDLOE ISL.: *Snodgrass & Heller*, no. 772 (hb. Gr.). CHARLES ISL.: *Andersson* (l. c., but his spec. so labelled in hb. Gr. is clearly *G. barbadense*). CHATHAM ISL.: *Andersson*. INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 656 (hb. Gr.). Endemic. *Andersson* (2), 97, states that this species was collected upon Chatham and James Islands by Darwin, but this appears to have been a clerical error and to refer to the preceding species.

#### HIBISCUS, L.

I. TILIACEUS, L. Sp. 694 (1753). *Paritium tiliaceum*, Hook. f. (4), 262; Anderss. (1), 229, & (2), 98. — CHARLES ISL.: *Edmonston*. Further distrib. general in tropics.

#### MALACHRA, L.

M. CAPITATA, L. Syst. ed. 12, 458 (1767); Hook. f. (3), 231; Anderss. (1), 229, & (2), 98; Gürcke in Engl. Bot. Jahrb. xvi. 348. — JAMES ISL.: *Darwin* acc. to Hook. f., l. c. Further distrib. trop. S. Am., W. Ind., Mex., sparingly introd. in trop. of Old World.

#### SIDA, L.

S. ACUTA, Burm., var. CARPINIFOLIA, K. Schum. in Mart. Fl. Bras. xii. pt. 3, 326 (1891); E. G. Baker, Jour. Bot. xxx. 238. *S. carpinifolia*, L. f. Suppl. 307 (1781); Anderss. (1), 229, & (2), 98, excl. synon. — CHARLES ISL.: dry places of middle region, *Andersson*. Further distrib. general in trop. and sub trop. regions.

*S. ANGUSTIFOLIA*, Lam. Dict. i. 4 (1783). *S. tenuicaulis*, Hook. f. (3), 232, acc. to E. G. Baker. *S. spinosa* & *S. tenuicaulis*, Anderss. (1), 229, & (2), 98. *S. spinosa*, var. *angustifolia*, Griseb. Fl. Brit. W. Ind. 74 (1859); E. G. Baker, Jour. Bot. xxx. 237. *S. rhombifolia*, Rob. & Greenm. (1), 145, in part (as to pl. Charles and pl. Indefatigable). — ALBEMARLE ISL.: Lee (hb. U. S. Nat. Mus.); Iguana Cove, Snodgrass & Heller, nos. 84 (hb. Gr.), 104 (hb. Gr.). CHARLES ISL.: Andersson; Baur, no. 17 (hb. Gr.); Snodgrass & Heller, no. 438 (hb. Gr.). CHATHAM ISL.: lower region, Andersson (hb. Gr.). DUNCAN ISL.: Snodgrass & Heller, no. 701 (hb. Gr.). GARDNER ISL.: Snodgrass & Heller, no. 629 (hb. Gr.). INDEFATIGABLE ISL.: Andersson; south of Conway Bay, Baur, no. 18 (hb. Gr.). JAMES ISL.: Darwin; Andersson. NARBOROUGH ISL.: northern part, Snodgrass & Heller, no. 298 (hb. Gr.). Further distrib. general in warm countries.

*S. CORDIFOLIA*, L. Sp. 684 (1753); K. Schum. in Mart. Fl. Bras. xii. pt. 3, 331, t. 62. — ALBEMARLE ISL.: Iguana Cove, below 310 m. alt., Snodgrass & Heller, no. 860 (hb. Gr.). Sterile. Further distrib. general in trop. and sub trop. regions.

*S. PANICULATA*, L. Syst. ed. 10, 1145 (1760); Rob. & Greenm. (1), 145; E. G. Baker, Jour. Bot. xxx. 294. *S. atrosanguinea*, Jacq. Ic. Rar. t. 136. *S. floribunda*, HBK. Nov. Gen. & Sp. v. 258, t. 473 (1821). — GALAPAGOS IDS.: Habel acc. to Hemsl. in litt. ALBEMARLE ISL.: Iguana Cove, Snodgrass & Heller, nos. 71 (hb. Gr.), 86 (hb. Gr.). CHARLES ISL.: Baur, no. 19 (hb. Gr.); Snodgrass & Heller, no. 401 (hb. Gr.). Further distrib. trop. S. Am., W. Ind., Mex.

*S. RHOMBIFOLIA*, L. Sp. 684 (1753); Hook. f. (4), 262; Anderss. (1), 229, & (2), 98; Rob. & Greenm. (1), 145, in part (as to pl. Chatham); E. G. Baker, Jour. Bot. xxx. 239, q. v. for synon. — CHARLES ISL.: Edmonston; Lee (hb. U. S. Nat. Mus.); Snodgrass & Heller, no. 448 (hb. Gr.). CHATHAM ISL.: stony places, lower region, Andersson; southwest end, middle region, Baur, no. 15 (hb. Gr.); Snodgrass & Heller, no. 532 (hb. Gr.). Further distrib. general in warm countries.

*S. SPINOSA*, L. Sp. 683 (1753); Gray, Syn. Fl. i. pt. 1, 324. — GALAPAGOS IDS.: Habel. ALBEMARLE ISL.: common on tufa soil, Tagus Cove, Snodgrass & Heller, no. 206 (hb. Gr.). Further distrib. general in warm countries. In distinguishing this species and *S. angustifolia*, I have followed Dr. Gray's treatment and distinctions.

*S. VERONICAEFOLIA*, Lam., var. *HUMILIS*, K. Schum. in Mart. Fl. Bras. xii. pt. 3, 320 (1891), q. v. for extensive synon.; E. G. Baker, Jour. Bot. xxx. 293. *S. humilis*, Cav. Diss. v. 277, t. 134, f. 2 (1788). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 85 (hb. Gr.). Further distrib. general in tropics.

## STERCULIACEAE.

### WALTHERIA, L.

*W. RETICULATA*, Hook. f. (3), 231; Anderss. (1), 231, & (2), 99; Rob. & Greenm. (1), 145. — This endemic species which has now been found upon no less than nine islands of the archipelago shows the same sort of formal variation that has been described in the case of *Euphorbia viminea*, Hook. f. (see Rob. & Greenm. (1), 138–139). The original characterization was unfortunately drawn from mixed material from Chatham, James, and Albemarle islands. We may, however, take as typical the form with a very close fine tomentum, small thickish leaves, 1.5 to 2.5 cm. long, with strongly crisped margins. The leaves are rounded rather than cordate at the base, and their indumentum becomes decidedly yellowish in a dried state. This form, assumed as typical, has been collected on GALAPAGOS IDS.: *Edmonston* (hb. Gr.). ALBEMARLE ISL.: *Macrae*; southern part, *Baur*, no. 32 (hb. Gr.); Elizabeth Bay, *Snodgrass & Heller*, nos. 269 (hb. Gr.), 289 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 73 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 162 (hb. Gr.). CHARLES ISL.: *Andersson*; *Baur*, no. 33 (hb. Gr.). JAMES ISL.: *Douglas*; "*Macrae*;"<sup>1</sup> James Bay, along edge of new lava, *Snodgrass & Heller*, no. 367 (hb. Gr.). JERVIS ISL.: *Baur* (this may belong to one of the following forms). Endemic. From this may be distinguished: —

Forma *acamata*, tomento imprimis ramulorum crassiore valde flavescente; foliis magnis crassiusculis cordatis. — INDEFATIGABLE ISL.: *Baur*, no. 27 (hb. Gr.); *Andersson*? Endemic.

Forma *Anderssonii*, indumento ac illud formae typicae tenui densoque sed griseo et nullo modo flavescente; foliis multo majoribus 4–5.5 cm. longis, 3.2–4.2 latis cordatis. — BARRINGTON ISL.: *Baur*, no. 26 (hb. Gr.); *Snodgrass & Heller*, no. 474 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *Darwin*? NARBOROUGH ISL.: northern part, *Snodgrass & Heller*, no. 301 (hb. Gr.). TOWER ISL.: *Baur*, no. 30 (hb. Gr.); *Snodgrass & Heller*, no. 797 (hb. Gr.). Endemic.

<sup>1</sup> Cited by Andersson, but probably a mistake for *Scouler*.



*Forma intermedia*, tomento typico sed minus flavescente: foliis quam illi formae typicae majoribus 3-4 cm. longis sed quam hi formae *Anderssonii* minoribus et minus cordatis. — ABINGDON ISL.: *Snodgrass & Heller*, no. 840 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 28 (hb. Gr.); *Snodgrass & Heller*, no. 757 (hb. Gr.). CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.); Cuevas Bay, *Baur*, no. 34 (hb. Gr.); *Snodgrass & Heller*, no. 426 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 640 (hb. Gr.). NARBOROUGH ISL.: southern part, 300 to 615 m. alt., *Snodgrass & Heller*, no. 326 (hb. Gr.). Endemic.

## TURNERACEAE.

## TURNERA, L.

*T. ULMIFOLIA*, L. Sp. 271 (1753); Hook. f. (4), 262; Anderss. (1), 221, & (2), 93; Urb. Jahrb. Bot. Gard. Berlin, ii. 138 (where spec. is elaborately subdivided). — CHARLES ISL.: *Edmonston* (hb. Gr.). Further distrib. general in the tropics.

## PASSIFLORACEAE.

## PASSIFLORA, L.

*P. FOETIDA*, L. Sp. 959 (1753); Cav. Diss. 458, t. 289; Anderss. (1), 221, & (2), 93; Rose (2), 137; Rob. & Greenm. (1), 146. — CHARLES ISL.: upper region, *Andersson*; *A. Agassiz*. CHATHAM ISL.: *A. Agassiz*; southwest end, middle region, *Baur*, no. 159 (hb. Gr.); *Snodgrass & Heller*, no. 496 (hb. Gr.). Further distrib. general in trop. and subtrop. Amer.

*P. LINEARILOBA*, Hook. f. (3), 222. *P. linearifolia*, Anderss. (1), 221, & (2), 93. ? *P. tridactylites*, Hook. f. (3), 222; Anderss. (1), 221, & (2), 93. *P. suberosa*, var. *lineariloba*, Masters in Mart. Fl. Bras. xiii. pt. 1, 579 (1872). *P. suberosa*, var., Rob. & Greenm. (1), 146. — GALAPAGOS IDS.: *Habel*. CHARLES ISL.: *Darwin*; ? *Andersson*. GARDNER ISL.: *Snodgrass & Heller*, no. 625 (hb. Gr.). HOOD ISL.: *Baur*, no. 160 (hb. Gr.). JAMES ISL.: *Scouler*; *Douglas*. NARBOROUGH ISL.: southern part, trailing on bushes, rare, 615 m. alt., *Snodgrass & Heller*, no. 321 (hb. Gr.). Endemic. This species seems very different from continental specimens of *P. suberosa*, L., at hand.

*P. PUBERULA*, Hook. f. (3), 223; Anderss. (1), 221, & (2), 93. — JAMES ISL.: *Darwin*. Endemic. Perhaps a form of *P. suberosa*, L., as considered by several writers.

## CARICACEAE.

## CARICA, L.

C. PAPAYA, L. Hort. Cliff. 461, & Sp. 1036 (1753); Anderss. (1), 223, & (2), 94. — CHARLES ISL.: about habitations, *Andersson*. Further distrib. general in tropics.

## LOASACEAE.

## MENTZELIA, L.

M. ASPERA, L. Sp. 516 (1753); Anderss. (1), 222, & (2), 94; Rob. & Greenm. (1), 146. ?*Acrolasia squalida*, Hook. f. (3), 222; Anderss. (1), 222, & (2), 93. — ALBEMARLE ISL.: *Andersson*; Iguana Cove, *Snodgrass & Heller*, no. 102 (hb. Gr.); Tagus Cove, common from beach to 310 m. alt., in shady places, *Snodgrass & Heller*, no. 175 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; Cuevas Bay, *Baur*, no. 162 (hb. Gr.); *Snodgrass & Heller*, no. 429 (hb. Gr.). CHATHAM ISL.: *Andersson*; southwest end, lower region, *Baur*, no. 161 (hb. Gr.); *Snodgrass & Heller*, no. 530 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 689 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 614 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 719 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; northern part, *Snodgrass & Heller*, no. 664 (hb. Gr.). JAMES ISL.: *Andersson*; James Bay, abundant on lava soil in shade, *Snodgrass & Heller*, no. 376 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 803 (hb. Gr.). Further distrib. N. Am.

## SCLEROTHRIX, Presl.

S. FASCICULATA, Presl, Symb. Bot. ii. 3, t. 53 (1858). *Ancyrostemma micranthum*, Poepp. & Endl. Nov. Gen. & Sp. iii. 65 (1845). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 123, 128 (both in hb. Gr.). JAMES ISL.: James Bay, common on lava rocks near beach, *Snodgrass & Heller*, no. 373 (hb. Gr.). NARBOROUGH ISL.: southern part, tolerably common, alt. 615 m., *Snodgrass & Heller*, no. 315a. Further distrib. Mex. to Peru and Brazil.

## CACTACEAE.

[The plants of this family secured by Messrs. Snodgrass & Heller have been kindly identified by Prof. Karl Schumann of the Royal Botanical Museum, Berlin.]

## CEREUS, Mill.

*C. GALAPAGENSIS*, Weber, Bull. du Mus. d'hist. nat. Paris, 1899, p. 312 (1899). — CHARLES ISL.: *Du Petit-Thouars*. Endemic. This can scarcely be regarded as a described species.

*C. nesioticus*, K. Sch. nov. sp. in litt., "humilis 30 cm. longitudinem non attingens; caulibus caespitosis et e basi communi in omnes partes more spinarum Echini radiantibus costatis ubique spinulis numerosis atrocastaneis tectis; costis humilibus 3 mm. vix superantibus alte crenatis et in tubercula fere perfecte dissolutis; areolis orbicularibus, 2.5 mm. diametro lano sparso exigue tectis; spinis quam 40 pluribus inaequalibus saepe (praesertim infimis) apice fractis in unam centralem et alias exteriores non distributis, maximis 3 cm. longis omnibus quam setae equinae vix rigidioribus erectis strictis divaricatis non pungentibus; floribus 7 cm. longis; ovario subgloboso subobliquo leviter tuberculato et spinulis ad 5 mm. longis flavo-fuscis radiantibus armato; tubo perigonii angusto item in areolis spinoso, lobis exterioribus lanceolatis 1.2 cm. longis vix 2 mm. latis, interioribus etiam angustioribus et magis linearibus verosimiliter albis; staminibus prope faucem, filamentis perbrevibus non 1 mm. longis, antheris bis vel paulo ultra longioribus; fructu ellipsoideo in summo spinoso-areolato basi acuto 2.5 cm. longo et 1.3 cm. crasso; seminibus numerosis, 1.2 mm. longis ellipsoideis rufis leviter punctatis." — ALBEMARLE ISL.: Black Bight, *Snodgrass & Heller*, no. 923 (hb. Berl. & hb. Gr.); lava fields, Elizabeth Bay, *Snodgrass & Heller*, no. 939 (hb. Berl. & hb. Gr.); Point Christopher, *Snodgrass & Heller*, no. 932 (hb. Berl. & hb. Gr.). NARBOROUGH ISL.: eastern side, on barren black lava, *Snodgrass & Heller*, nos. 919 (hb. Berl. & hb. Gr.), 927 (hb. Berl. & hb. Gr.). "Note. — This species is a very peculiar one from its long brown non-pungent spines, which clothe the stem so densely that its surface is invisible. I have never before seen a species of the genus with such short filaments as in this. The petals are also uncommonly narrow. Probably the flower is white. I think it can hardly be compared with either of the two species of *Cereus* thus far known from the Galapagos Islands. From *C. Thouarsii*, Weber, which is said to be similar to *C. multangularis*, it is perfectly distinguished by the mode of growth and by the much smaller fruit which does not at all resemble a large prune" [K. Sch. in litt.]. Endemic.

*C. sclerocarpus*, K. Sch. nov. sp. in litt., "arborescens; caule principali 3-6 m. alto 15-22 cm. diametro ramos paucos sibi saepius parallelolos gerente; articulis costatis, costis in sectione transversa triangularibus

obtusis 1 cm. altis ope sulcorum acutorum separatis; areolis orbicularibus 3.5 mm. diametro tomento brevi tectis; spinis 20–25 in radiales et centrales non distributis rectis pungentibus maximo 4.5 cm. longo; floribus circa 10–11 cm. longis; ovario tereti squamato; squamis sparsis 1–1.5 mm. longis ovatis acutis; perigonii tubo gracili paucis bracteolis brevibus ornato; lobis exterioribus subspathulatis 3 cm. longis apice eroso-denticulatis, interioribus brevioribus angustioribus acuminatisque; staminibus prope faucem perigonii affixis 2 cm. longis; stilo florem fere aequante; stigmatibus 11 fere 2 cm. longis filiformibus; fructu duro strato exteriori perfirmitate ovoideo acuto flore marcido coronato 7 cm. longo 3 cm. diametro; seminibus haud numerosis (ovulis plurimis abortivis) disciformibus 1 mm. diametro nigris lucidis leviter foveolatis.” — ALBEMARLE ISL.: Pt. Christopher, *Snodgrass & Heller*, nos. 933 (hb. Berl. & hb. Gr.), 934 (hb. Berl. & hb. Gr.); Black Bight, *Snodgrass & Heller*, no. 935 (hb. Berl. & hb. Gr.). “Note. — There is only one species in the Galapagos Islands which may be compared with this, namely *C. galapagensis*, Weber. The characterization of the latter is, however, so imperfect that I cannot identify my species with it.” [K. Sch. in litt.]. Endemic. In his field notes Mr. Heller reports a giant *Cereus* on Bindloe (where rare), Chatham, James, and Narborough Islands which was probably *C. sclerocarpus*. It grew upon barren lava.

C. THOUARSII, Weber, Bull. du. Mus. d'hist. nat. Paris, 1899, p. 312 (1899). — CHARLES ISL.: *Du Petit-Thouars*. Endemic. Not satisfactorily described.

#### OPUNTIA, Raf.

O. GALAPAGEIA, Hensl. Mag. Zoöl. & Bot. i. 467, t. 14, f. 2 (1837); Hook. f. (3), 223; Anderss. (1), 224, & (2), 95; Hemsl. Gard. Chron. ser. 3, xxiv. (1898), p. 265, f. 75; Lindberg, Monatschr. Kakteenk. iv. 120–122, 134–135, & v. 10; K. Schumann, ibid. ix. 19, 20, x. 173, & Gesammtbeschr. Kakteen, 747. — CHARLES ISL.: *Hassler Exp.*, acc. to ms. note of Engelm. (hb. Mo. Bot. Gard.). JAMES ISL.: *Darwin; Hassler Exp.*, acc. to ms. note of Engelm. (hb. Mo. Bot. Gard.). JERVIS ISL.: *Hassler Exp.*, acc. to ms. note of Engelm. (hb. Mo. Bot. Gard.). Endemic.

O. Helleri, K. Sch. nov. sp. in litt., “humilis plus minusve prostrata 30–60 cm. alta dense caespitosa ramosa; articulis lineari-oblongis apice basique acutis planis 11 cm. longis 4 cm. latis tenuibus apice setis fuscis munitis; areolis orbicularibus 2 mm. diametro non manifeste in tuberculis editis capillis paucis albis tectis etiam tomento flavido in parte

superiori instructis; spinis circa 20 inaequalibus 1.5 cm. non superantibus non pungentibus plus minusve arcuatis flavo-fuscis; glochidiis paucis (circa 50) in summa parte areolae sitis et non arcte pungentibus apice obtusis; spinis lateralibus glochidiarum non eminentibus; ovario paulo quam 3 cm. longiore turbinato tuberculato; areolis quam illae articularum non miuoribus et a lano modice copioso tectis et a spinis capillaceis modice laxis ad 2 cm. longis flavo-fuscis munitis; perigonio 3-3.5 cm. maximo diametro; lobis exterioribus subulatis, 3 mm. longis, sequentibus late ovatis acutis mucronatisve verosimiliter flavo-viridibus, intimis subobovatis fere 2 cm. longis; staminibus fere in fundo infimo floris crateriformis insertis permultis; stilo 2 cm. longo crasso; stigmatibus 6 erectis incurvatis carnosius percrassis." — WENMAN ISL.: *Snodgrass & Heller*, no. 917 (hb. Berl. & hb. Gr.). "Note. — The relatively large flower brings this species near *O. myriacantha*, Web., from which it differs in the mode of growth, smaller articles, and non-pungent spines." [K. Sch. in litt.]. Endemic.

O. MYRIACANTHA, Weber in Bois, Dictionn. d'horticult. 894 (1898), & Bull. du Mus. d'hist. nat. Paris, 1899, p. 313 (1899). — ALBEMARLE ISL.: *Hassler Exp.*, acc. to ms. note of Engelm. (hb. Mo. Bot. Gard.). CHARLES ISL.: *Du Petit-Thouars* [*Dr. Néboux*] (hb. Mus. d'hist. nat. Paris, & hb. Mo. Bot. Gard.). INDEFATIGABLE ISL.: *Hassler Exp.*, acc. to ms. note of Engelm. (hb. Mo. Bot. Gard.). Endemic.

*Opuntias* also occur (acc. to field notes of several collectors) upon Abingdon, Barrington, Bindloe, Chatham, Culpepper, Duncan, Hood, Narborough, North and South Seymour, and Tower Islands, but as no specimens of them have been secured it is impossible to refer them with definiteness to any of the foregoing species. Dr. Baur<sup>1</sup> says of the genus: "Die grosse *Opuntia* hat einen verschiedenen Charakter beinahe auf jeder Insel. Die *Opuntia* von Barrington, Indefatigable und süd-Albemarle z. B. entwickelt einen sehr hohen Stamm; die von Hood und Charles besitzt einen verhältnissmässig niederen und dickeren Stamm; die *Opuntia* von Jervis wiederum einen sehr niederen; die Verzweigung beginnt schon kurz über dem Boden; die *Opuntia* von Tower hat gar keinen Stamm, die Verzweigung beginnt sofort am Boden, es ist ein niederer Busch, aber kein Baum. Die Form von Bindloe zeigt Charaktere, die zwischen den Individuen von Tower und Jervis liegen." It seems not unlikely that the low plant on Tower lacking the main trunk may be the same as Professor Schumann's *O. Helleri* from the not very distant island of Wenman.

<sup>1</sup> Biol. Centralbl. xlii. 247 (1892).

## LYTHRACEAE.

## CUPHEA, P. Br.

C. PATULA, St. Hil. Fl. Bras. Merid. iii. 101; Caruel (1), 624; Koehne in Engl. Jahrb. ii. 165 (1882).—CHATHAM ISL.: *Chierchia*, acc. to Caruel, l. c. Further distrib. Brazil.

## RHIZOPHORACEAE.

## RHIZOPHORA, L.

R. MANGLE, L. Sp. 443 (1753); Hook. f. (3), 225; Anderss. (1), 247, & (2), 108.—ALBEMARLE ISL.: in swamps north of Tagus Cove, acc. to ms. notes of Mr. Heller; also fringing lagoons on the south and west shores of Elizabeth Bay, acc. to Mr. Heller. CHATHAM ISL.: *Darwin*. DUNCAN ISL.: in a swamp on the west coast, acc. to Mr. Heller. INDEFATIGABLE ISL.: about lagoons, acc. to Mr. Heller. NARBOROUGH ISL.: forming large swamps fringing lagoons, on the east and southeast sides of the island, *Snodgrass & Heller*, no 918 (hb. Gr.). Further distrib. general on trop. shores.

## MYRTACEAE.

## PSIDIUM, L.

P. GALAPAGEIUM, Hook. f. (3), 224. *P. galapagejum*, Anderss. (1), 247, & (2), 109.—ALBEMARLE ISL.: Iguana Cove, above 125 m. alt., bushes 2.4 to 3.6 m. high, *Snodgrass & Heller*, no. 126 (hb. Gr.). JAMES ISL.: *Scouler*; *Darwin*. Endemic.

## COMBRETACEAE.

## CONOCARPUS, Gaertn.

C. ERECTUS, L. Sp. 176 (1753); Jacq. Stirp. Am. 78, t. 52; Anderss. (1), 247, & (2), 108.—ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 44 (hb. Gr.). CHATHAM ISL.: somewhat marshy woodland in the littoral region, *Andersson*. JAMES ISL.: *Andersson* (hb. Gr.); abundant along sandy beach, James Bay, *Snodgrass & Heller*, no. 382 (hb. Gr.). Further distrib. W. Ind., Mex., southern U. S., trop. S. Am., introd. in Africa.



## LAGUNCULARIA, Gaertn.

*L. RACEMOSA*, Gaertn. Fruct. iii. 209, t. 217, f. 2 (1805); Brandis in Engl. & Prantl, Nat. Pflanzenf. iii. Ab. 7, 127, f. 64. — *ALBEMARLE ISL.*: Elizabeth Bay, lava fields near beach, *Snodgrass & Heller*, nos. 270 (hb. Gr.), 937 (hb. Gr.); Point Christopher, *Snodgrass & Heller*, no. 931 (hb. Gr.). *NARBOROUGH ISL.*: east side, *Snodgrass & Heller*, no. 920 (hb. Gr.). Further distrib. shores, Mex., W. Ind., S. Am., trop. Afr. Not before recorded from the Galapagos Ids.

## MELASTOMACEAE.

## MICONIA, R. &amp; P.

*M. Robinsoniana*, Cogniaux, nov. sp. (sect. *Tamonea*); *M. sp. Rob. & Greenm.* (1), 146; "glaberrima; ramis junioribus acute tetragonis non alatis; foliis breviuscule petiolatis, anguste ligulato-oblongis, leviter obtuseque acuminatis, basi breviter attenuatis vel subrotundatis, margine integerrimis, trinerviis vel obscure 5-nerviis, nervulis transversalibus numerosis tenuissimis; floribus sessilibus, secus ramulorum paniculae solitariis; calyce oblongo, limbo leviter dilatato, brevissime 5-lobato, lobis late rotundatis; staminum filamentis glaberrimis.

"Rami robustiusculi, laeves. Petiolus gracilis, leviter tortuosus, 1-1.5 cm. longus. Folia rigidiuscula, utrinque laevia, siccitate non nitida, 14-16 cm. longa, 3-3.5 cm. lata, nervis subtus satis prominentibus. Paniculae majusculae, multiflorae, trichotome ramosae, ramis gracilibus, erectis vel paulo patulis, leviter compressis, articulatis. Bractaeae patentissimae, rigidae, triangulari-ovatae, acutae, 1-1.5 mm. longae. Calyx laevis, basi rotundatus, sub apice leviter constrictus, circiter 5 mm. longus. Petala erecta, anguste obovata, obtusa, 6 mm. longa. Staminum filamenta capillaria, 3-4 mm. longa; antherae valde arcuatae, apice longe attenuatae, 4-5 mm. longae. Stylus crassiusculus, glaber, apice arcuatus caeteris rectus, 5 mm. longus, stigmati paulo incrassato. — Affinis *M. nitidissimae*, Cogn. in DC. Monogr. Phan. vii. 748, sed bene distincta." — *CHATHAM ISL.*: southwest end, upper region, *Baur*, no. 163 (hb. Gr. & hb. Cogniaux). Endemic.

## HALORRHAGIDACEAE.

## MYRIOPHYLLUM, L.

*M. sp.* Wolf (1), 284. — *CHARLES ISL.*: in brook near the hacienda, acc. to Wolf, l. c.

## UMBELLIFERAE.

## APIUM, L.

A. LACINIATUM, Urb. in Mart. Fl. Bras. xi. pt. 1, 343 (1879). *Helosciadium laciniatum*, DC. Mém. Soc. Phys. Genève. iv. 495 (1828); Hook. f. (3), 215; Anderss. (1), 219, & (2), 92. — CHARLES ISL.: *Darwin*, acc. to Hook. f., l. c. Further distrib. Peru to Chili.

A. LEPTOPHYLLUM, F. Muell. acc. to Benth. Fl. Austr. iii. 372 (1866). *A. Ammi*, Urb. in Mart. Fl. Bras. xi. pt. 1, 341, q. v. for extensive synonym. *Helosciadium leptophyllum*, DC. Mém. Soc. Phys. Genève. iv. 493 (1828); Hook. f. (3), 215; Anderss. (1), 219, & (2), 92. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 41 (hb. Gr.). JAMES ISL.: *Darwin*. Further distrib. N. Am., Mex., S. Am., Austral., etc.

## CENTELLA, L.

C. ASIATICA, Urb. in Mart. Fl. Bras. xi. pt. 1, 287 (1879). *Hydrocotyle asiatica*, L. Sp. 234 (1753). *H. repanda*, Pers. Syn. i. 302 (1805); Caruel (1), 623. — CHATHAM ISL.: *Chierchia*, acc. to Caruel. Further distrib. N. Am., S. Am., Asia, etc.

## HYDROCOTYLE, L.

*H. galapagensis*, nov. sp., glaberrima, repens, radicibus ad nodos fibrosis petiolis erectis teretibus, foliis orbicularibus peltatis prope centrum insertis 12-13-radiati-nervatis, margine duplo dentata, nervis venulisque translucentibus, pedunculis erectis, umbellis simplicibus sub 16-floribus non proliferis: involucri bracteis ovatis brevibus pedicellis flores quadruple excedentibus: calycis limbo obsoleto, petalibus ovatis obtusis patentibus, albis, fructu latiori quam longo basi rotundato vel subcordato. *H. umbellata*, Rob. & Greenm. (1), 146, not L. — CHATHAM ISL.: southwest end, upper region, *Baur*, no. 150 (hb. Gr.). Near *H. umbellata*, L., which it resembles rather closely in habit, flowers, and fruit, the leaves, however, differ rather conspicuously by their doubly dentate not crenate margin from the Linnaean species. Transitional forms have been sought in vain in material of *H. umbellata* from many other parts of the world.

## PETROSELINUM, Koch.

P. SATIVUM, Hoffm. Gen. Umb. 177 (1814); Anderss. (1), 219, & (2), 92. *Apium Petroselinum*, L. Sp. 264 (1753). *Carum Petrose-*

*linum*, Benth. & Hook. f. Gen. i. 891 (1867). — CHARLES ISL.: cultivated ground, middle and upper region, *Andersson* (hb. Gr.). Introd. from the Old World.

## PLUMBAGINACEAE.

## PLUMBAGO, L.

*P. SCANDENS*, L. Sp. ed. 2, 215 (1762); Hook. f. (3), 194; Anderss. (1), 172, & (2), 65; Caruel (1), 623; Rob. & Greenm. (1), 147. — ALBEMARLE ISL.: *Darwin*; southern part, *Baur*, no. 235 (hb. Gr.); mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 284 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 220 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson* (hb. Gr.); *Chierchia*; *Lee* (hb. U. S. Nat. Mus.); *Baur*, no. 234 (hb. Gr.); *Snodgrass & Heller*, no. 411 (hb. Gr.). CHATHAM ISL.: *Andersson*; *Snodgrass & Heller*, no. 506 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 236 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*. Further distrib. general in warm countries.

(*P. tomentosa*, Hook. f., l. c., is a typographical error for *Plantago tomentosa*.)

## APOCYNACEAE.

## VALLESIA, R. &amp; P.

*V. CYMBAEFOLIA*, Ort. Hort. Matr. Dec. 58 (1798). *V. glabra*, Link, Enum. Hort. Berol. i. 207 (1821); Hook. f. (3), 205; Anderss. (1) 195, & (2), 78. *Rauwolfia glabra*, Cav. Ic.-iii. 50, t. 297 (1795). *Psychotria angustata*, Rob. & Greenm. (1), 146, not Anderss. — GALAPAGOS IDS.: *Edmonston* (hb. Gr.). ALBEMARLE ISL.: Point Christopher, *Snodgrass & Heller*, no. 929 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 926 (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson*. HOOD ISL.: *Baur*, no. 149 (hb. Gr.). Further distrib. S. Am., Mex., W. Ind., Florida.

*V. PUBESCENS*, Anderss. (1), 195, & (2), 79. — CHARLES ISL.: *Snodgrass & Heller*, no. 451 (hb. Gr.). CHATHAM ISL.: woods in lower region, *Andersson*; *Snodgrass & Heller*, no. 518 (hb. Gr.). Endemic.

## ASCLEPIADACEAE.

## ASCLEPIAS, L.

*A. ANGUSTISSIMA*, Anderss. (1), 196, & (2), 79. *Vincetoxicum*? Rob. & Greenm. (1), 147, in part (as to pl. Albemarle). — ABINGDON

ISL.: *Snodgrass & Heller*, no. 845 (hb. Gr.). ALBEMARLE ISL.: in the driest part of the middle region, *Andersson*; southern part, *Baur*, without number (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 145 (hb. Gr.). Endemic.

#### VINCETOXICUM, Moench.

V.? Rob. & Greenm. (1), 147, in part (as to pl. Charles). — CHARLES ISL.: Cuevas Bay, *Baur*, without number (hb. Gr.). Sterile and doubtful.

### CONVOLVULACEAE.

#### CALYSTEGIA, R. Br.

C. SOLDANELLA, R. Br. Prodr. 483 (1810); Hook. f. (4), 261; Anderss. (1), 212, & (2), 87. *Convolvulus Soldanelta*, L. Sp. 159 (1753); Engl. Bot. v. t. 314; Gray, Syn. Fl. N. A. ii. pt. 1, 215. — CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c. Further distrib. general, Pacific shores of N. and S. Am., also in Eu, N. Zealand, etc.

#### CUSCUTA, L.

C. ACUTA, Engelm. Trans. Acad. Sci. St. Louis, i. 497 (1859); Anderss. (2), 89. — BINDLOE ISL.: *Snodgrass & Heller*, no. 769 (hb. Gr.), identity doubtful. CHARLES ISL.: *Andersson*. CHATHAM ISL.: *Andersson*. NARBOROUGH ISL.: southern part, not common, 600 m. alt., *Snodgrass & Heller*, no. 318 (hb. Gr.). Endemic.

C. GYMNOCARPA, Engelm. Trans. Acad. Sci. St. Louis, i. 496 (1859); Anderss. (2), 89; Rob. & Greenm. (1), 147. *C. sandvicensis*, var. *Mimosae*, Hook. f. (3), 205; Anderss. (2), 89 (*sandvicensis*). *C. sandwichiana*, var. *Mimosae*, Anderss. (1), 214. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: eastern portion, Cowley Bay, *Baur*, no. 205 (hb. Gr.), parasitic on *Borreria suberecta*, Hook. f., and doubtfully identical with the plant of Darwin. JAMES ISL.: *Darwin*. Endemic.

#### EVOLVULUS, L.

E. GLABER, Spreng. Syst. i. 862 (1825); Hallier, Jahrb. Hamb. Wiss. Anst. xvi. 22. *E. hirsutus*, HBK. Nov. Gen. & Sp. iii. 117 (1818), not Lam. *E. mucronatus*, Sw. acc. to Wikstr. Vet. Acad. Handl. Stockh. 1827, p. 61. *E. glabriusculus*, Choix. Diss. Conv. 156 (1838); Hook. f. (3), 205; Anderss. (1), 211, & (2), 87; Rose (1), 137; Rob. & Greenm. (1), 147. — ALBEMARLE ISL.: *Andersson*; Iguana Cove,

*Snodgrass & Heller*, no. 32 (hb. Gr.). CHARLES ISL.: *Snodgrass & Heller*, no. 432 (hb. Gr.); *A. Agassiz* (hb. Gr.); *Baur*. CHATHAM ISL.: *Andersson* (hb. Gr.); southwest end, middle region, *Baur*, no. 203 (hb. Gr.); *Snodgrass & Heller*, no. 517 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 687 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*. JAMES ISL.: *Scouler*. SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 564 (hb. Gr.). Further distrib. S. Am., W. Ind. Said by Hallier, l. c, to have been collected on Chatham and Hood Islands by Steindachner; but Dr. Steindachner visited neither of these islands.

E. SIMPLEX, Anderss. (1), 211, & (2), 87; Rob. & Greenm. (1), 147. — CHARLES ISL.: *Baur* (hb. Gr.); *Snodgrass & Heller*, no. 431 (hb. Gr.). CHATHAM ISL.: *Andersson*; *Baur*, no. 201 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson* (hb. Gr.); northern part, *Snodgrass & Heller*, no. 659 (hb. Gr.). JAMES ISL.: common on bluff near beach, James Bay, *Snodgrass & Heller*, no. 384 (hb. Gr.). Endemic.

#### IPOMOEA, L.

I. BILOBA, Forsk. Fl. Aegypt.-Arab. 44 (1775); Hook. f. & Jacks. Ind. Kew. i. 1223. *I. Pes-caprae*, Sweet, Hort. Suburb. Lond. 35 (1818); Roth, Nov. Pl. Sp. 109; Anderss. (1), 212, & (2), 87. *I. maritima*, R. Br. Prodr. 486 (1810); Hook. f. (3), 204. — ALBEMARLE ISL.: Black Bight, *Snodgrass & Heller*, no. 257 (hb. Gr.); pebbly beach, Iguana Cove, *Snodgrass & Heller*, no. 125 (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson*. Widely distrib. in trop. reg.

I. BONA-NOX, L. Sp. ed. 2, 228 (1762); Sims, Bot. Mag. t. 752. — ALBEMARLE ISL.: *Snodgrass & Heller*, no. 872 (hb. Gr.). Widely distrib. and extensively cultivated.

I. CAMPANULATA, L. Sp. 160 (1753); Wight, Ic. Pl. Ind. iv. t. 1375. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 43 (hb. Gr.). Further distrib. East India, Malayan Archipelago. This is, I believe, the only instance in which an Old World species occurs on the Galapagos Ids. which has not been reported from any part of the American continent.

I. GALAPAGENSIS, Anderss. (1), 213, & (2), 88. — ALBEMARLE ISL.: *Lee* (hb. U. S. Nat. Mus.); Iguana Cove, *Snodgrass & Heller*, nos. 33 (hb. Gr.), 94 (hb. Gr.). CHARLES ISL.: *Andersson*; *Snodgrass & Heller*, no. 464 (hb. Gr.). CHATHAM ISL.: *Andersson*. DUNCAN ISL.: *Snodgrass & Heller*, no. 690 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 728 (hb. Gr.). JAMES ISL.: common in any soil, James

Bay, *Snodgrass & Heller*, no. 374 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 583 (hb. Gr.). Endemic.

I. HABELIANA, Oliv. in Hook. Ic. t. 1099 (1871). *I. sp.* Rose (1), 137. — BINDLOE ISL.: *Snodgrass & Heller*, no. 759 (hb. Gr.). DUNCAN ISL.: *A. Agassiz* (hb. U. S. Nat. Mus.); *Snodgrass & Heller*, no. 712 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 616 (hb. Gr.). HOOD ISL.: *Habel* (hb. Kew); *Snodgrass & Heller*, no. 751 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 799 (hb. Gr.). Endemic. A peculiar species with entire ovate-lanceolate attenuate glabrous leaves 12 to 18 cm. long, oblong obtuse sepals and a tubular corolla 9 to 15 cm. long. I am indebted to Dr. H. Hallier of Hamburg for his examination of this species.

I. KINBERGI, Anderss. (1), 212, & (2), 88; Rob. & Greenm. (1), 147. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 839 (hb. Gr.). CHATHAM ISL.: *Andersson*. INDEFATIGABLE ISL.: *Andersson*; south of Conway Bay, *Baur*, no. 195 (hb. Gr.); northern part, *Snodgrass & Heller*, no. 674 (hb. Gr.). JERVIS ISL.: *Baur*, no. 196 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 801 (hb. Gr.). WENMAN ISL.: *Snodgrass & Heller*, no. 5 (hb. Gr.). Endemic.

I. LINEARIFOLIA, Hook. f. (3), 204; Anderss. (1), 212, & (2), 88. — JAMES ISL.: *Darwin*, acc. to Hook. f. Endemic. Secured by no other collector. Ascribed in the Index Kewensis to the Cape Verde Ids.

I. NIL, Roth, Catalect. i. 36 (1797). *I. acuminata*, Morong & Britt. Ann. N. Y. Acad. Sci. vii. 169 (1893); Rob. & Greenm. (1), 147; not R. & S. *Pharbitis Nil*, Choisy, Mém. Soc. Phys. Genève. vi. 441 (1833). — CHARLES ISL.: *Snodgrass & Heller*, no. 418 (hb. Gr.). CHATHAM ISL.: southwestern end, lower region, *Baur*, no. 200 (hb. Gr.); *Snodgrass & Heller*, no. 511 (hb. Gr.). Further distrib. general in warm regions.

An indeterminate *Ipomoea* from Indefatigable Isl., mentioned and briefly described by Andersson (1), 214, & (2), 88, may well have been this species.

I. PENTAPHYLLA, Jacq. Coll. ii. 297 (1788), & Ic. Pl. Rar. ii. 10, t. 319; Rob. & Greenm. (1), 147. *Batatas pentaphylla*, Choisy, Mém. Soc. Phys. Genève. vi. 408 (1833); Anderss. (1), 214, & (2), 89. *Merremia pentaphylla*, Hallier in Engl. Jahrb. xvi. 552 (1893). — ABINGDON ISL.: *Snodgrass & Heller*, no. 846 (hb. Gr.). CHARLES ISL.: *Andersson*. CHATHAM ISL.: *Andersson*. DUNCAN ISL.: *Snod-*



grass & Heller, no. 707 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 628 (hb. Gr.). HOOD ISL.: *Baur*, no. 198 (hb. Gr.); *Snodgrass & Heller*, no. 729 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; northern part, *Snodgrass & Heller*, no. 671 (hb. Gr.). JAMES ISL.: *Andersson*. JERVIS ISL.: *Baur*, no. 199 (hb. Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 568 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 804 (hb. Gr.). Further distrib. general in trop.

I. TUBIFLORA, Hook. f. (3), 204; Anderss. (1), 213, & (2), 88. — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Endemic. Secured by no other collector.

## BORAGINACEAE.

## COLDENIA, L.

C. DARWINI, Gürke in Engl. & Prantl, Nat. Pflanzenf. iv. Ab. 3a, 90 (1893). *C. Darwinii*, Rob. & Greenm. (1), 147 (excl. pl. Albemarle). GALAPAGOA *Darwini*, Hook. f. (3), 196; Anderss. (1), 210, & (2), 86, t. 16, f. 1. — GALAPAGOS IDS.: *Edmonston* (hb. Gr.); *Habel*. ALBEMARLE ISL.: *Macrae*. BINDLOE ISL.: *Baur*, no. 383 (hb. Gr.); *Snodgrass & Heller*, no. 764 (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson* (hb. Gr.). INDEFATIGABLE ISL.: Conway Bay, *Baur*, no. 385 (hb. Gr.); northern part, *Snodgrass & Heller*, no. 679 (hb. Gr.). JAMES ISL.: Orchilla Bay, *Baur*, no. 384 (hb. Gr.). Endemic.

C. FUSCA, Gürke in Engl. & Prantl, Nat. Pflanzenf. iv. Ab. 3a, 90 (1893); Rob. & Greenm. (1), 147. *C. Darwinii*, Rob. & Greenm. (1), 147, as to pl. Albemarle. GALAPAGOA *fusca*, Hook. f. (3), 197; Anderss. (1), 210, & (2), 87, t. 16, f. 2. — ALBEMARLE ISL.: common on tufa soil about Tagus Cove, from beach to summit of hills, *Snodgrass & Heller*, no. 180 (hb. Gr.); southern portion, *Baur*, no. 382 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 468 (hb. Gr.). CHARLES ISL.: *Darwin*. CHATHAM ISL.: southwest end, lower region, *Baur*, no. 217 (hb. Gr.). HOOD ISL.: *Baur*, no. 218 (hb. Gr.). INDEFATIGABLE ISL.: in dry sandy places on the shore, *Andersson* (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 587 (hb. Gr.). Endemic.

## CORDIA, L.

C. ANDERSSONI, Gürke in Engl. & Prantl, Nat. Pflanzenf. iv. Ab. 3a, 83 (1893). *Varronia canescens*, Anderss. (1), 203, & (2), 83, t. 11, f. 2. *V. leucophlyctis*, Anderss. (1), 203, & (2), 83, t. 11, f. 1, not

*C. leucophlyctis*, Hook. f. — CHARLES ISL.: in wooded places, lower region, *Andersson* (hb. Gr.); *Lee* (hb. U. S. Nat. Mus. & hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.). Endemic.

C. GALAPAGENSIS, Gürke, l. c. *C. scaberrima*, Rob. & Greenm. (1), 147, not HBK. *C. sp.*, Rob. & Greenm. (1), 147. *Varronia scaberrima*, Anderss. (1), 202, & (2), 82, t. 11, f. 3. — ALBEMARLE ISL.: eastern part, *Baur*, no. 210 (hb. Gr.); Cowley Bay, *Baur*, no. 212 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, nos. 75 (hb. Gr.), 136 (hb. Gr.), 857 (hb. Gr.); mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 291 (hb. Gr.); Tagus Cove, from near beach to 1300 m. alt., *Snodgrass & Heller*, nos. 195 (hb. Gr.), 881 (hb. Gr.), 893 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 215 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; south of Conway Bay, *Baur*, no. 211 (hb. Gr.). NARBOROUGH ISL.: southern part, growing 1.3 m. high, spreading 2 m. or more, altitude 650 m., *Snodgrass & Heller*, nos. 331 (hb. Gr.), 342 (hb. Gr.). Endemic.

C. HOOKERIANA, Gürke, l. c. *C. linearis*, Hook. f. (3), 199; Rob. & Greenm. (1), 147; not DC. *Varronia linearis*, Anderss. (1), 204, & (2), 84, t. 11, f. 4. *Lithocardium Hookerianum*, O. Kuntze, Rev. Gen. ii. 976 (1891). — ALBEMARLE ISL.: Elizabeth Cove, *Snodgrass & Heller*, no. 272 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 28 (hb. Gr.); southern portion, *Baur*, no. 213 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 155 (hb. Gr.), 196 (hb. Gr.), above 650 m., no. 897 (hb. Gr.). CHARLES ISL.: *Baur*, no. 214 (hb. Gr.). JAMES ISL.; *Darwin*; *Andersson*. NARBOROUGH ISL.: arborescent, 3 or 4 m. high, common in southern part at 600 m. alt., *Snodgrass & Heller*, no. 327 (hb. Gr.). Endemic.

C. LEUCOPHLYCTIS, Hook. f. (3), 199; Gürke, l. c. 83; Rob. & Greenm. (1), 147. *Lithocardium leucophlyctis*, O. Kuntze, Rev. Gen. ii. 977 (1891). — GALAPAGOS IDS.; *Habel*. ALBEMARLE ISL.: *Macrae*; *Darwin*. JAMES ISL.: *Scouler*; ? Orchilla Bay, *Baur*, no. 209 (hb. Gr.). Endemic.

C. LUTEA, Lam. Ill. i. 421 (1791); Hook. f. (3), 198; Rose (1), 137; Rob. & Greenm. (1), 147. *C. rotundifolia*, Ruiz & Pavon, Fl. Per. ii. 24, t. 148, fig. a (very bad, especially as to corolla), 1799; Hook. f. & Jacks. Ind. Kew. i. 614 (where ascribed to Panama instead of Peru). *Varronia rotundifolia*, DC. Prodr. ix. 469 (1845). *V. flava*, Anderss. (1), 201, & (2), 82. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 821 (hb. Gr.). ALBEMARLE ISL.: *Lee*

(hb. U. S. Nat. Mus.) ; *Macrae* ; Iguana Cove, *Snodgrass & Heller*, no. 74 (hb. Gr.) ; mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 294 (hb. Gr.) ; also on lava fields near beach, Elizabeth Bay, *Snodgrass & Heller*, no. 940 (hb. Gr.) ; Tagus Cove, *Snodgrass & Heller*, nos. 159 (hb. Gr.), 925 (hb. Gr.). BARRINGTON ISL. : *Baur*, no. 231 (hb. Gr.) ; *Snodgrass & Heller*, no. 473 (hb. Gr.). BINDLOE ISL. : *Baur*, no. 232 (hb. Gr.) ; *Snodgrass & Heller*, no. 787 (hb. Gr.). CHARLES ISL. : *Andersson* ; *A. Agassiz* ; *Baur*, no. 228 (hb. Gr.) ; *Snodgrass & Heller*, no. 419 (hb. Gr.). CHATHAM ISL. : *Darwin* ; *Andersson* (hb. Gr.) ; southwest end, lower region, *Baur*, no. 208 (hb. Gr.) ; *Snodgrass & Heller*, no. 524 (hb. Gr.). DUNCAN ISL. : *A. Agassiz* (hb. Gr.) ; *Baur*, no. 230 (hb. Gr.) ; very abundant on hills, *Snodgrass & Heller*, no. 703 (hb. Gr.). GARDNER ISL. : *Snodgrass & Heller*, no. 642 (hb. Gr.). HOOD ISL. : *Baur*, no. 229 (hb. Gr.). INDEFATIGABLE ISL. : *Andersson*. JAMES ISL. : *Andersson* ; James Bay, 2 to 3 m. high, not common, *Snodgrass & Heller*, no. 365 (hb. Gr.). JERVIS ISL. : *Baur*, no. 233 (hb. Gr.). SEYMOUR ISL. : north, *Snodgrass & Heller*, no. 569 (hb. Gr.) ; south, *Snodgrass & Heller*, no. 604 (hb. Gr.). TOWER ISL. : *Snodgrass & Heller*, no. 793 (hb. Gr.). Further distrib. Ecuador, Peru, Bolivia. To our present knowledge this is the most widely distributed plant on the Archipelago, occurring as it does upon no less than fourteen islands. It is, however, remarkably constant in its characters.

C. REVOLUTA, Hook. f. (3), 199. *Varronia revoluta*, Anderss. (1), 204, & (2), 84. *Lithocardium revolutum*, O. Kuntze, Rev. Gen. ii. 977 (1891). — GALAPAGOS IDS. : *Habel*. CHARLES ISL. : *Darwin*. Endemic.

Var. NIGRICANS, Hook. f. (3), 199. *Varronia revoluta*, var. *nigricans*, Anderss. (1), 204, & (2), 84. — ALBEMARLE ISL. : *Macrae*. Endemic.

C. SCOULEI, Hook. f. (3), 200 ; Rob. & Greenm. (1), 147. *Varronia Scouleri*, Anderss. (1), 204, & (2), 83. *Lithocardium Scouleri*, O. Kuntze, Rev. Gen. ii. 977 (1891). — CHATHAM ISL. : *Andersson* ; southwest end, middle region, *Baur*, no. 216 (hb. Gr.). JAMES ISL. : *Scouler*. Endemic.

C. nov. sp.? *C. dasycephala*, Anderss. (1), 204, & (2), 84, not HBK. *Varronia dasycephala*, Hook. f. (4), 261, not Desv. — CHARLES ISL. : *Edmonston* (hb. Gr.). Certainly different from any other species on the Islands, and clearly distinguished from *C. dasycephala* by the simple widely spreading tawny setae which cover the stem. Unfortunately the material is too poor for description. Endemic.

## HELIOTROPIMUM, L.

*H. Anderssonii*. *H. asperrimum*, Anderss. (2), 86, not *R. Br. Sarcanthus asperrimus*, Anderss. (1), 209. — INDEFATIGABLE ISL.: *Andersson* (hb. Gr.). Endemic.

*H. CURASSAVICUM*, L. Sp. 130 (1753); Hook. f. (3), 198; Anderss. (1), 208, & (2), 86; Rose (2), 137, in part; Rob. & Greenm. (1), 147. — GALAPAGOS IDS.: *Habel*. BINDLOE ISL.: *Snodgrass & Heller*, no. 766 (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson* (hb. Gr.); *A. Agassiz* (hb. Gr. & hb. U. S. Nat. Mus.); *Baur*, no. 219 (hb. Gr.); *Snodgrass & Heller*, no. 514 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 725 (hb. Gr.). INDEFATIGABLE ISL.: northern part, *Snodgrass & Heller*, no. 660 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 560 (hb. Gr.). Further distrib. wide, especially upon trop. shores.

*H. INDICUM*, L. Sp. 130 (1753); Hook. f. (4), 261. *Heliophytum indicum*, DC. Prodr. ix. 556; Anderss. (1), 208, & (2) 86. — CHARLES ISL.: *Edmonsten*; *Lee* (hb. Gr. & hb. U. S. Nat. Mus.); *Snodgrass & Heller*, no. 447 (hb. Gr.). Widely distrib. weed of warm countries.

*H. PARVIFLORUM*, L. Mant. 201 (1771); Hook. f. (3), 198; Rob. & Greenm. (1), 147. *H. curassavicum*, Rose (1), 137, in part. *Heliophytum parviflorum*, DC. Prodr. ix. 553 (1845); Anderss. (1), 208, & (2), 86. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 812 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 80 (hb. Gr.); Tagus Cove, most abundant near the coast, but also found inland to 300 m. alt., *Snodgrass & Heller*, nos. 160 (hb. Gr.), 200 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 486 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *Lee* (hb. Gr.); *Baur*; *Snodgrass & Heller*, no. 463 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *A. Agassiz* (hb. Gr. & hb. U. S. Nat. Mus.); southwest end, upper region, *Baur*, no. 220 (hb. Gr.); lower region, *Baur*, no. 221 (hb. Gr.); *Snodgrass & Heller*, no. 510 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 639 (hb. Gr.). HOOD ISL.: *Baur*, no. 222 (hb. Gr.), through typographical error ascribed to Duncan Isl. by Rob. & Greenm. l. c.; *Snodgrass & Heller*, no. 747 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*. JAMES ISL.: *Douglas*; James Bay, scattered in lava soil, *Snodgrass & Heller*, no. 357 (hb. Gr.). NARBOROUGH ISL.: southern part, rather common at 650 m. alt., *Snodgrass & Heller*, no. 348 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 792 (hb. Gr.). Widely distrib. in warm countries.

## TOURNEFORTIA, L.

*T. HIRSUTISSIMA*, L. Sp. 140 (1753); Caruel (1), 622. — CHATHAM ISL.: *Chierchia*, acc. to Caruel. Further distrib. trop. Am. I suspect that *Chierchia*'s specimen will on examination prove to be *T. rufo-sericea*, Hook. f.

*T. LAURIFOLIA*, Vent. Choix Pl. 2 (1803). *T. syringaefolia*, Vahl, Symb. iii. 23 (1794); Anderss. (1), 206, & (2), 84, not Miq.; ? Caruel (1), 622. — CHATHAM ISL.: *Chierchia*, acc. to Caruel, sterile and doubtful. JAMES ISL.: *Andersson*. Further distrib. Mex., trop. S. Am. A doubtful member of the Galapageian flora.

*T. PSILOSTACHYA*, HBK. Nov. Gen. & Sp. iii. 78 (1818); Cham. Linnaea, iv. 470; DC. Prodr. ix. 525; Hook. f. (3), 198 (*psilostachys*); Anderss. (1), 208, & (2), 85; Rob. & Greenm. (1), 147. ? *T. difformis*, Anderss. (1), 206, & (2), 85. — ALBEMARLE ISL.: Iguana Cove, the commonest shrub, everywhere from the beach to 650 m., *Snodgrass & Heller*, nos. 81 (hb. Gr.), 120 (hb. Gr.). CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.); *Snodgrass & Heller*, no. 436 (hb. Gr.). CHATHAM ISL.: *Andersson* (*T. difformis*, Anderss.). HOOD ISL.: *Baur*, no. 227 (hb. Gr.). JAMES ISL.: *Douglas & Scouler*, acc. to Hook. f.; common near sandy beach, *Snodgrass & Heller*, no. 363 (hb. Gr.). Further distrib. trop. S. Am. This species appears to have recently become abundant in the Galapagos Islands.

*T. PUBESCENS*, Hook. f. (3), 198; Anderss. (1), 206, & (2), 84; Rob. & Greenm. (1), 147. *T. opaca*, Anderss. (1), 205, & (2), 84; Rob. & Greenm. (1), 147. — ALBEMARLE ISL.: Iguana Cove, abundant near beach, and to 650 m. alt., *Snodgrass & Heller*, no. 119 (hb. Gr.); bushes 2 to 4 m. high, *Snodgrass & Heller*, nos. 135 (hb. Gr.), 870 (hb. Gr.); mountain east of Tagus Cove, *Snodgrass & Heller*, no. 255 (hb. Gr.); southern part, *Baur*, no. 225 (hb. Gr.). CHARLES ISL.: *Lee* (hb. Gr.). CHATHAM ISL.: *Darwin*; southwest end, middle region, *Baur*, no. 206 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 226 (hb. Gr.). INDEFATIGABLE ISL.: in wooded places of the lower region, *Andersson* (hb. Gr.). Endemic. I am quite unable to separate *T. opaca*, Anderss., which appears to be only a glabrate state.

*T. RUFO-SERICEA*, Hook. f. (3), 197; Anderss. (1), 205, & (2), 84; Rob. & Greenm. (1), 147. — ABINGDON ISL.: *Snodgrass & Heller*, no. 816 (hb. Gr.). ALBEMARLE ISL.: Iguana Cove, up to 650 m. alt., *Snodgrass & Heller*, nos. 54 (hb. Gr.), 853 (hb. Gr.), 868 (hb. Gr.); southern part, *Baur*, no. 207 (hb. Gr.); Tagus Cove, 1300 m. alt.,

*Snodgrass & Heller*, nos. 883 (hb. Gr.), 884 (hb. Gr.). CHARLES ISL.: *Andersson* (hb. Gr.); *Lee* (hb. Gr. & hb. U. S. Nat. Mus.). JAMES ISL.: *Darwin*. Endemic.

T. STRIGOSA, *Anderss.* (1), 207, & (2), 85, t. 9, f. 3; *Rob. & Greenm.* (1), 147. — ALBEMARLE ISL.: southern part, *Baur*, no. 224 (hb. Gr.). CHARLES ISL.: wooded places, lower region, *Andersson*. CHATHAM ISL.: *Andersson*. Endemic. This species is reduced to *T. psilostachya* by *Hook. f. & Jacks.* (*Ind. Kew.* ii. 1091), but it differs from that species considerably in pubescence and inflorescence, if (as seems probable) *Andersson's* plant is represented by *Baur's* no. 224.

## VERBENACEAE.

### AVICENNIA, L.

A. OFFICINALIS, L. Sp. 110 (1753). *A. tomentosa*, *Jacq. Stirp. Am.* 178, t. 112 (1763); *Hook. f.* (3), 195; *Anderss.* (1), 201, & (2), 82; *Rob. & Greenm.* (1), 147. — GALAPAGOS IDS.: *Edmonston*; *Habel*. ALBEMARLE ISL.: Elizabeth Bay, about lagoons with *Rhizophora*, acc. to *Mr. Heller*. CHARLES ISL.: Cormorant Bay, *Baur*, no. 171 (hb. Gr.). CHATHAM ISL.: *Darwin*. INDEFATIGABLE ISL.: forming swamps in lagoons on the north coast, acc. to *Mr. Heller*. JAMES ISL.: *Andersson*; tree 3 to 6 m. high, along margin of a salt pond, James Bay, *Snodgrass & Heller*, no. 368 (hb. Gr.). NARBOROUGH ISL.: fringing lagoons on the east coast, acc. to *Mr. Heller*. SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 605 (hb. Gr.). Further distrib. general on trop. shores.

### CLERODENDRON, L.

C. MOLLE, *HBK. Nov. Gen. & Sp.* ii. 244 (1817); *Hook. f.* (3), 195; *Anderss.* (1), 201, & (2), 82; *Carnel* (1), 622; *Rose* (1), 137; *Rob. & Greenm.* (1), 147. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: southern portion, *Baur*, no. 168 (hb. Gr.); Iguana Cove, rather common from beach to 300 m. alt., *Snodgrass & Heller*, nos. 59 (hb. Gr.), 116 (hb. Gr.), 855 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *Lee* (hb. U. S. Nat. Mus.); *A. Agassiz*; *Snodgrass & Heller*, no. 443 (hb. Gr.). CHATHAM ISL.: *Andersson*; *Chierchia*; *A. Agassiz* (hb. Gr.); in upper wooded region, *Baur*, no. 170 (hb. Gr.). JAMES ISL.: *Scouler*; *Andersson*; common on lava coast, *Snodgrass & Heller*, no. 369 (hb. Gr.). Further distrib. Ecuador.



C. sp. Hook. f. (4), 261, Anderss. (1), 201, & (2), 82. — CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c.

C. sp. Hook. f., l. c.; Anderss. ll. cc. — CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c.

#### DURANTA, L.

D. PLUMIERI, Jacq. Stirp. Am. 186, t. 176, f. 76 (1763). — ALBEMARLE ISL.: mountain east of Tagus Cove, alt. 925 m., *Snodgrass & Heller*, nos. 248 (hb. Gr.), 906 (hb. Gr.). Widely distributed in trop. Am. The form on Albemarle has entire leaves and is closely matched by some specimens from Mexico.

#### LANTANA, L.

L. PEDUNCULARIS, Anderss. (1), 200, & (2), 81; Rob. & Greenm. (1), 147; *L. sp.* Rose (1), 187. Reduced to *L. odorata*, L., by Griseb. Fl. Brit. W. Ind. 496, and with scarcely a doubt the *L. recta* and *L. canescens* of Hook. f. (3), 195, and Anderss. ll. cc. and consequently *L. odorata*, Anderss. ll. cc. — GALAPAGOS IDS.: *Andersson*, no. 215 (hb. Gr.). ABINGDON ISL.: *Snodgrass & Heller*, no. 813 (hb. Gr.). ALBEMARLE ISL.: *Darwin* (*L. recta*, Hook. f.); *Andersson*; mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 293 (hb. Gr.); eastern portion, Cowley Bay, *Baur*, no. 174 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 64 (hb. Gr.); Tagus Cove, from beach to 300 m. alt., not common, *Snodgrass & Heller*, no. 201 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 476 (hb. Gr.). BINDLOE ISL.: *Baur*, no. 187 (hb. Gr.); *Snodgrass & Heller*, no. 758 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*; *Lee* (hb. U. S. Nat. Mus.); *A. Agassiz* (hb. U. S. Nat. Mus.); *Baur*, no. 173 (hb. Gr.); *Snodgrass & Heller*, no. 445 (hb. Gr.). CHATHAM ISL.: *Andersson*; *Snodgrass & Heller*, no. 515 (hb. Gr.), doubtful form. DUNCAN ISL.: *Baur*; *Snodgrass & Heller*, no. 700 (hb. Gr.). GARDNER ISL.: *Snodgrass & Heller*, no. 613 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 736 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; *Snodgrass & Heller*, no. 657 (hb. Gr.). JAMES ISL.: *Andersson*; the most abundant bush, everywhere in lava soil, 1 to 2 m. high, *Snodgrass & Heller*, no. 381 (hb. Gr.). JERVIS ISL.: *Baur*, no. 176 (hb. Gr.). NARBOROUGH ISL.: southern part, 600 m. alt., *Snodgrass & Heller*, no. 351 (hb. Gr.). TOWER ISL.: *Snodgrass & Heller*, no. 806 (hb. Gr.). Endemic? While treating the plants, here mentioned, provisionally as a single endemic species, I suspect that they may be ultimately identified with

one of the continental American species (cf. *L. lilacina* and *L. canescens*, HBK.), or segregated into several more or less distinct forms. The indefiniteness which now prevails regarding the S. American species of the genus is such as to render the further classification of the Galapageian forms, for the present, impracticable.

#### LIPPIA, Houst.

*L. CANESCENS*, HBK. Nov. Gen. & Sp. ii. 263 (1817). *L. lanceolata*, Rose (1), 137, not Michx. *L. nodiflora*, Cham. Linnaea, vii. 213 (1832); Rob. & Greenm. (1), 147; not Michx. — CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.); *Baur*. CHATHAM ISL.: *A. Agassiz* (hb. U. S. Nat. Mus.); *Baur*, no. 178 (hb. Gr.), a green form. DUNCAN ISL.: *Snodgrass & Heller*, no. 709 (hb. Gr.). HOOD ISL.: around a mud lake, *Snodgrass & Heller*, no. 755 (hb. Gr.). Further distrib. S. Am.

*L. ROSMARINIFOLIA*, Anderss. (1), 198, & (2), 80; Rob. & Greenm. (1), 147. — ABINGDON ISL.: *Snodgrass & Heller*, no. 827 (hb. Gr.). ALBEMARLE ISL.: in very dry places of the middle region, *Andersson*; Elizabeth Bay, *Snodgrass & Heller*, no. 280 (hb. Gr.); eastern part, *Baur*, no. 179 (hb. Gr.); Tagus Cove, not common, 150 to 460 m. alt., *Snodgrass & Heller*, nos. 168 (hb. Gr.), 147 (hb. Gr.); mountain east of Tagus Cove, *Snodgrass & Heller*, nos. 233, 251, 888, 890, & 896 (all in hb. Gr.). Nos. 888, 890 & 896 show that the leaves on some branches become strongly toothed. Endemic.

*Baur's* nos. 181 and 182 (both in hb. Gr.) from eastern Albemarle are probably branches of this species (sterile).

*L. SALICIFOLIA*, Anderss. (1), 198, & (2), 80. — CHARLES ISL.: in woods on the side of the mountain summit. *Andersson* (hb. Gr.). Endemic.

#### STACHYTARPHETA, Vahl.

*S. DICHOTOMA*, Vahl, Enum. i. 207 (1804); Caruel (1), 622. *S. urticifolia*, Sims, Bot. Mag. t. 1848 (1816). *Verbena dichotoma*, Ruiz & Pav. Fl. Per. i. 23, t. 34, fig. b (1798). *Bouchea* sp. Rob. & Greenm. (1), 147. — CHARLES ISL.: *Chierchia*, acc. to Caruel, l. c.; *Lee* (hb. Gr.); *Baur*, without number (hb. Gr.). Further distrib. trop. and subtrop. Am.

#### VERBENA, L.

*V. CAROLINA*, L. Syst. ed. 10, 852 (1760); Mill. Dict. ed. 8, no. 7. *V. polystachya*, HBK. Nov. Gen. & Sp. ii. 274 (1817); Hook. f. (3),

195, as var. *V. caroliniana*, Anderss. (1), 199, & (2), 81. — JAMES ISL.: *Darwin*, acc. to Hook. f. Further distrib. Mex., Andean S. Am.

V. *GRISEA*, Rob. & Greenm. (1), 142, 147, where by typographical error ascribed to Albemarle Island. — DUNCAN ISL.: *Baur*, no. 180 (hb. Gr.). Endemic.

V. *LITORALIS*, HBK. Nov. Gen. & Sp. ii. 276, t. 137 (1817); Hook. f. (3), 195; Anderss. (1), 200, & (2), 81; Rob. & Greenm. (1), 147. — CHARLES ISL.: *Darwin*; *Baur*, no. 172 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.). Further distrib. Mex., S. Am.

V. *OFFICINALIS*, L. Sp. 20 (1753); Hook. f. (1), 194; Anderss. (1), 199, & (2), 81. — JAMES ISL.: *Darwin*. Tropics of both hemispheres.

## LABIATAE.

### HYPTIS, Jacq.

H. *CAPITATA*, Jacq. Ic. Pl. Rar. i. t. 114; Hook. f. (4), 261; Anderss. (1), 197, & (2), 80. — CHARLES ISL.: *Edmonston*. Further distrib. trop. S. Am., Mex., W. Ind.

H. *SUBVERTICILLATA*, Anderss. (1), 197, & (2), 80. — ALBEMARLE ISL.: in very sterile places, middle region, *Andersson* (hb. Gr.). INDEFATIGABLE ISL.: *Baur*. (Of this plant, called *H. spicigera* by Rob. & Greenm. (1), 147, unfortunately no specimen was retained at herb. Gray, and it is now impossible to examine the material. I have little doubt, however, that it was *H. subverticillata*.) JAMES ISL.: James Bay, common on lava rocks, *Snodgrass & Heller*, no. 356 (hb. Gr.). NARBOROUGH ISL.: northern part, *Snodgrass & Heller*, no. 299 (hb. Gr.). Endemic.

### SALVIA, L.

S. *OCCIDENTALIS*, Sw. Prodr. 14 (1788), & Fl. Ind. Occ. i. 43; Hook. f. (3), 200; Anderss. (1), 196, & (2), 79; Rob. & Greenm. (1), 147. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 61 (hb. Gr.), 96 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 217 (hb. Gr.). CHARLES ISL.: *Darwin*; in dry places, upper region, *Andersson*, (hb. Gr.); *Baur*, no. 167 (hb. Gr.); *Snodgrass & Heller*, no. 407 (hb. Gr.). CHATHAM ISL.: southwest end, middle region, *Baur*, no. 166 (hb. Gr.). JAMES ISL.: *Darwin*; common on rocks near beach, *Snodgrass & Heller*, no. 362 (hb. Gr.). Further distrib. Mex., W. Ind., S. Am. This may perhaps have been the sterile "*Lamiacea*" collected by Chierchia and mentioned by Caruel (1), 622.

*S. PROSTRATA*, Hook. f. (3), 200; Anderss. (1), 197, & (2), 79. — JAMES ISL.: *Darwin*. Endemic.

*S. TILIAEFOLIA*, Vahl, Symb. iii. 7 (1794); Hook. f. (3), 200; Anderss. (1), 196, & (2), 79. — CHARLES ISL.: *Darwin*, acc. to Hook. f., l.c. Further distrib. Mex., trop. S. Am.

#### TEUCRIUM, L.

*T. INFLATUM*, Sw. Prodr. 88 (1788); Hook. f. (3), 201; Anderss. (1), 197, & (2), 79; Rob. & Greenm. (1), 147. — CHARLES ISL.: *Darwin*; grassy places, upper region, *Andersson* (hb. Gr.). CHATHAM ISL.: southwest end, middle region, *Baur*, no. 164 (hb. Gr.). Further distrib. S. Am.

#### SOLANACEAE.

##### ACNISTUS, Schott.

*A. ELLIPTICUS*, Hook. f. in Miers, Lond. Jour. Bot. iv. 343 (1845), & (3), 203; Anderss. (1), 218, & (2), 91 (*Ancistus*). — CHARLES ISL.: *Darwin*. Endemic.

*A. insularis*, nov. sp., frutex; ramis a cortice griseo-brunnea tectis; ramulis pallidioribus in specimine siccato rugoso-striatis apice foliatis; foliis approximatis alternis obovatis integris penninerviatis supra atroviridibus parce pubescentibus subtus pallidioribus molliter pubescentibus basi cuneatis apice rotundatis; pilis indumenti crispis; umbellis sessilibus 2-4-floris; pedicellis elongatis filiformibus nutantibus subglabris apice in calycem incrassatis; calyce campanulato tenui subglabro truncato; corolla tubulosa gradatim ampliata pilis crispis pubescenti; limbo 5-fido; dentibus deltoideis subobtusis; antheris in parte faucium superiori subsessilibus; stylo recto filiforme glabro; stigmatibus capitato. — *A. sp.* Rob. & Greenm. (1), 147. — CHATHAM ISL.: southwest end, middle region, June, 1891, *Baur*, no. 193 (hb. Gr.). Endemic. Leaf-blade 6 to 8 mm. long, half as broad; petiole 1.5 to 2 cm. long; pedicels 2 to 2.5 cm. long; corolla 3 cm. long; flowers more inclined to be nodding or even pendulous than indicated on the plate. This species must in many points resemble *A. ellipticus*, Hook. f. That, however, is described as having leaves attenuate at both ends and glabrous, the calyx-limb 5-crenate, the style somewhat curved and the stigma obscurely bilobed. PLATE 2, FIG. 3.

## CAPSICUM, L.

*C. ANNUM*, L. Sp. 188 (1753) ; Anderss. (1), 215, & (2), 90 ; Rob. & Greenm. (1), 147. — CHARLES ISL. : *Andersson* (hb. Gr.). CHATHAM ISL. : *Baur*. Widely distrib. in trop. reg.

## DATURA, L.

*D. TATULA*, L. Sp. ed. 2, 256 (1762). — CHARLES ISL. : *Snodgrass & Heller*, no. 412 (hb. Gr.). Further distrib. U. S., Mex., S. Am.

*D. sp.* — ALBEMARLE ISL. : Iguana Cove, *Snodgrass & Heller*, no. 124 (hb. Gr.). Differing from the preceding in the having a fine but rather copious pubescence throughout, and fewer weaker bristles on the fruit.

## LYCIUM, L.

*L. sp.* — HOOD ISL. : *Baur*, and probably the same from SEYMOUR ISL. : south, *Snodgrass & Heller*, no. 584 (hb. Gr.). Both sterile and indeterminate.

## LYCOPERSICUM, Hill.

*L. ESCULENTUM*, Mill., var. *MINOR*, Hook. f. (3), 202 (*Lycopersicon*) ; Anderss. (1), 216, & (2), 90. *L. peruvianum*, Anderss. (1), 216, & (2), 91, at least as to his own plant from Chatham, which entirely lacks the large foliaceous bracts of the S. Am. plant. *L. esculentum*, Rob. & Greenm. (1), 147. — ABINGDON ISL. : *Snodgrass & Heller*, no. 843 (hb. Gr.). ALBEMARLE ISL. : *Andersson* ? southern part, *Baur*, no. 188 (hb. Gr.) ; Pt. Christopher, *Snodgrass & Heller*, no. 928 (hb. Gr.) ; Tagus Cove, *Snodgrass & Heller*, no. 911 (hb. Gr.). CHATHAM ISL. : *Andersson*. HOOD ISL. : *Baur*, no. 189 (hb. Gr.) ; *Snodgrass & Heller*, no. 741 (hb. Gr.). JAMES ISL. ; *Darwin* ; *Snodgrass & Heller*, no. 399 (hb. Gr.). NARBOROUGH ISL. : Mangrove Point, on rocks above beach, *Snodgrass & Heller*, no. 305 (hb. Gr.). Further distrib. S. Am., Polynesia.

*L. PERUVIANUM*, Mill., var. *PARVIFLORUM*, Hook. f. (3), 202 (*Lycopersicon peruvianum*). — CHATHAM ISL. : *Darwin*, acc. to Hook. f. Further distrib. Andean S. Am. I have seen no specimens from the Galapagos Ids. with the foliaceous bracts said to be characteristic of this species. A variety of *L. peruvianum* was collected on the Galapagos Islands by Habel.

*L. PIMPINELLIFOLIUM*, Mill. Dict. ed. 8, no. 4 (*Lycopersicon*, 1768) ; Dun. in DC. Prodr. xiii. pt. 1, 23 ; Hook. f. (3), 202 (*Lycopersicon*) ;

Anderss. (1), 216 & (2), 91. *Solanum pimpinellifolium*, L. Amoen. Acad. iv. 268 (1759). — GALAPAGOS IDS.: Goodridge (hb. Gr.). CHARLES ISL.: Andersson. CHATHAM ISL.: Darwin; Andersson. JAMES ISL.: Andersson. Further distrib. Andean.

L. sp. — CHATHAM ISL.: Snodgrass & Heller, no. 526 (hb. Gr.). Very likely a mere variety of *L. esculentum*, Mill., but although minutely glandular, quite destitute of the spreading-hirsute character shown by the other Galapageian specimens at hand.

#### NICOTIANA, L.

N. GLUTINOSA, L. Sp. 181 (1753); Hook. f. (3), 202; Anderss. (1), 215, & (2), 89. — CHARLES ISL.: Edmonston; Darwin; Andersson. Further distrib. Andean S. Am.

N. TABACUM, L. Sp. i. 180 (1753); Caruel (1), 622. — CHARLES ISL.: Chierchia, acc. to Caruel, l. c. Further distrib. trop. Am. and widely introduced through cult.

N. sp. Hook. f. (4), 261. — CHARLES ISL.: Edmonston, acc. to Hook. f., l. c.

#### PHYSALIS, L.

P. ANGULATA, L. Sp. 183 (1753); Anderss. (1), 215, & (2), 90; Rose (1), 137. — CHARLES ISL.: Andersson; A. Agassiz, acc. to Rose, l. c. CHATHAM ISL.: Snodgrass & Heller, no. 522 (hb. Gr.). Further distrib. general in trop. Am.

P. IXOCARPA, Brot. in Hornem. Hort. Hafn. Suppl. 26 (1819); Rydberg, Mem. Torr. Club, iv. 334. *P. aequata*, Jacq. f., acc. to Nees, Linnaea, vi. 470 (1831). *P. pubescens*, Rob. & Greenm. (1), 147, as to pl. Charles. — CHARLES ISL.: Cuevas Bay, Baur, no. 186 (hb. Gr.); Snodgrass & Heller, no. 434 (hb. Gr.). Widely distrib. in Am.

P. PUBESCENS, L. Sp. 183 (1753); Rob. & Greenm. (1), 147, as to pl. Chatham; Rydberg, Mem. Torr. Club, iv. 322. — ALBEMARLE ISL.: Tagus Cove, abundant in shady places near beach, Snodgrass & Heller, nos. 185 (hb. Gr.), 187 (hb. Gr.). BINDLOE ISL.: Snodgrass & Heller, no. 768 (hb. Gr.). CHARLES ISL.: Snodgrass & Heller, no. 433 (hb. Gr.). CHATHAM ISL.: southwest end, upper region, Baur, no. 185 (hb. Gr.). HOOD ISL.: Snodgrass & Heller, no. 740 (hb. Gr.), a robust large-fruited form of doubtful identity. JAMES ISL.: James Bay, in sand near beach, Snodgrass & Heller, no. 388 (hb. Gr.). NAR-



BOROUGH ISL.: southern part, *Snodgrass & Heller*, no. 303 (hb. Gr.). Widely distrib. in Am.

P. sp. Hook. f. (4), 261. — CHARLES ISL.: *Edmonston*.

#### SOLANUM, L.

S. EDMONSTONEI, Hook. f. (3), 201; Dun. in DC. Prodr. xiii. pt. 1, 45; Anderss. (1), 216, & (2), 90. — CHARLES ISL.: *Edmonston*. Endemic.

S. NIGRUM, L. Sp. 186 (1753); Hook. f. (3), 201; Anderss. (1), 216, & (2), 90; Rob. & Greenm. (1), 147. This is, with little doubt, the *S. Berterii* of Caruel (1), 622, perhaps also of "Hort. Par. 1835" [1829?], a nomen nudum, so far as I have learned. — ALBEMARLE ISL.: southern part, *Baur*, no. 192 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson* (hb. Gr.). CHATHAM ISL.: *Chierchia*; *Snodgrass & Heller*, no. 521 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 191 (hb. Gr.). JAMES ISL.: *Scouler*; *Darwin*; James Bay, scattered on sandy beach, *Snodgrass & Heller*, no. 387 (hb. Gr.). Further distrib. general. Various forms have been distinguished as to foliage and pubescence.

[S. TUBEROSUM, L., was included by Andersson in his second work (p. 90) but only on the basis of cultivated specimens.]

S. VERBASCIFOLIUM, L. Sp. 184 (1753); Jacq. Hort. Vindob. i. t. 13; Hook. f. (3), 201; Anderss. (1), 215, & (2), 90. — CHARLES ISL.: *Andersson*. JAMES ISL.: *Darwin*. NARBOROUGH ISL.: southern part, rare, 650 m. altitude, *Snodgrass & Heller*, nos. 329 (hb. Gr.), 353 (hb. Gr.). Further distrib. wide in trop. reg. Andersson, ll. cc., distinguishes two Galapageian forms on foliar differences.

S. sp. Hook. f. (4), 261. — CHARLES ISL.: *Edmonston*, acc. to Hook. f.

S. sp. Hook. f., l. c. — CHARLES ISL.: *Edmonston*, acc. to Hook. f.

#### THINOGETON, Benth.

T. HOOKERI, Anderss. (1), 217. — INDEFATIGABLE ISL.: *Andersson*, Endemic. Omitted by Andersson from his second paper.

T. MIERSII, Miers, Ann. & Mag. Nat. Hist. ser. 2, iv. 359 (1849); Anderss. (1), 217, & (2), 91; Dun. in DC. Prodr. xiii. 689. *Dictyocalyx Miersii*, Hook. f. (3), 203; Dun. in DC. Prodr. xiii. 538. *Cacabus Miersii*, Wettst. in Engl. & Prantl, Nat. Pflanzenf. iv. Ab. 3b, 16 (1891). *Solanacea*, Rob. & Greenm. (1), 147. — ALBEMARLE ISL.: *Macrae*; Black Bight, *Snodgrass & Heller*, no. 258 (hb. Gr.); Iguana

Cove, *Snodgrass & Heller*, no. 42 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 167 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 475 (hb. Gr.). CHARLES ISL.: *Darwin*; *Andersson*. CHATHAM ISL.: *Andersson*; *Snodgrass & Heller*, no. 523 (hb. Gr.). CULPEPPER ISL.: *Snodgrass & Heller*, no. 2 (hb. Gr.), a tomentose form with more sharply toothed leaves. HOOD ISL.: *Baur*, no. 194 (hb. Gr.). NARBOROUGH ISL.: Mangrove Point, *Snodgrass & Heller*, no. 307 (hb. Gr.); northern part, *Snodgrass & Heller*, no. 302 (hb. Gr.). Endemic. Mr. Heller remarks that this species as it occurs upon Culpepper Island recalls a cucumber vine and bears large brown berries. This seems to be a well marked genus, not to be united with *Cacabus*.

### SCROPHULARIACEAE.

#### CAPRARIA, L.

*C. BIFLORA*, L., var. *PILOSA*, Griseb. Fl. Brit. W. Ind. 427 (1861). *C. biflora*, Anderss. (1), 218, & (2), 91; Rob. & Greenm. (1), 147. — CHARLES ISL.: in very dry places, *Andersson* (hb. Gr.); *Baur*, no. 184 (hb. Gr.). CHATHAM ISL.: *Snodgrass & Heller*, no. 509 (hb. Gr.). Further distrib. trop. and sub trop. regions of the New World.

*C. PERUVIANA*, Benth. in DC. Prodr. x. 430 (1846). — CHARLES ISL.: *Lee* (hb. U. S. Nat. Mus.). Further distrib. coast of Ecuador to the uplands of Peru. Well marked, although by Hook. f. & Jacks. Ind. Kew. referred to *C. biflora*.

#### SCOPARIA, L.

*S. DULCIS*, L. Sp. 116 (1753); Hook. f. (3), 200; Anderss. (1), 218, & (2), 91; Caruel (1), 622; Rob. & Greenm. (1), 147. — CHARLES ISL.: *Darwin*; in arid grassy places of the middle and upper region, *Andersson*; *Baur*, no. 183 (hb. Gr.). CHATHAM ISL.: *Chierchia*, acc. to Caruel, l. c. Further distrib. general in trop. and sub trop. Am.

SCROPHULARIACEA, Hook. f. (3), 200. A dwarf indeterminate plant. — JAMES ISL.: *Darwin*, acc. to Hook. f. (3), 200.

### BIGNONIACEAE?

#### TECOMA, Juss.?

*T. sp.?* Caruel (1), 622. — CHATHAM ISL.: *Chierchia*, acc. to Caruel, l. c. Sterile and doubtful even as to family.

## ACANTHACEAE.

## DICLIPTERA, Juss.

*D. PERUVIANA*, Juss. Ann. Mus. Par. ix. 268 (1806); Nees in DC. Prodr. xi. 478; Hook. f. (3), 195; Anderss. (1), 219, & (2), 92. *Dianthera mucronata*, Ruiz & Pav. Fl. Per. i. 11, t. 16, fig. a (1798). *Justicia peruviana*, Lam. Dict. i. 633 (1783). — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Further distrib. Andes of Peru.

## JUSTICIA, L.

*J. (LEPTOSTACHYA) galapagana*, Lindau, nov. sp., "herbacea tota glanduloso-pilosa caulibus sexangularibus vel subteretibus, patente pilosis. Folia petiolis 1-2 cm. longis ovata basi rotundata et subito angustata, apice sensim acuminata, acutiuscula, margine integro, cystolithis vix visibilibus. Inflorescentiae pauciflorae, axillares, dichotomae, folia aequantes, apice spiciformes, floribus in axillis bractearum alternantibus. Pedicelli subnulli. Bracteae bracteolaeque subulatae, 0.2 mm. longae, pubescentes pilis glandulosis intermixtis. Calycis laciniae 4, subulatae, 4 mm. longae, 0.75 mm. latae, pubescentia ut in bracteis. Corolla extus dense pubescens tubo 4 mm. longo, basi 2 mm. diametro et apice usque ad 3 mm. ampliato. Labium superum 4 mm. longum, basi 4 mm. latum, dentibus apice minimis, intus rugula<sup>1</sup> instructum, inferum 4 mm. longum, lobis 3 rotundatis, 2 mm. diam. metientibus. Filamenta glabra, 3 mm. longa, antherum loculo supero 1 mm. longo obtuso, infero 1 mm. longo basi in calcar 0.5 mm. longum producto. Pollinis granula pro genere typica, 46-58  $\mu$  longa et 27-30  $\mu$  diam. Discus adest. Ovarium 1.5 mm. altum, pubescens. Stylus 6 mm. longus, pilosus. Capsula 12 mm. longa, 4 mm. lata, usque ad medium fere in stipitem contracta, pubescens pilis glanduligeris intermixtis, jaculatoribus hamatis, 0.2 mm. longis. Semina 4, brunneo-tomentosa, lentiformis, 0.3 mm. diametro." — ABINGDON ISL.: alt. 520 m., *Snodgrass & Heller*, no. 820 (hb. Gr.). "Obs. Proxima *Justiciae Pringlei* Robins., a qua differt pubescentia densiore et magis glutinosa, stylo ovarioque pilosis et maxime seminibus, quae sunt in *J. Pringlei* foveolata et pubescentia, sed in *J. galapagana* laevis et brunneo-tomentosa."

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<sup>1</sup> "Rugula, i. e., ruga longitudinalis a duobus lobis membranae labii superi formata, in qua stylus est inclusus."

## TETRAMERIUM, Nees.

*T. HISPIDUM*, Nees in DC. Prodr. xi. 468 (1847); Gray, Syn. Fl. ii. 330; Hemsl. Biol. Cent.-Am. Bot. ii. 525. Probably the *Tetramerium*, n. sp.? Hook. f. (3), 195; Anderss. (1), 195 & (2), 78. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 34 (hb. Gr.), 87 (hb. Gr.); mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 288 (hb. Gr.); Tagus Cove, from the coast to 450 m. alt.; *Snodgrass & Heller*, no. 213 (hb. Gr.). JAMES ISL.: *Darwin* (identity doubtful). Further distrib. Cent. Am., Mex., southwestern U. S.

## PLANTAGINACEAE.

## PLANTAGO, L.

*P. MAJOR*, L. Sp. 112 (1753); Caruel (1), 624. — CHATHAM ISL.: *Chierchia*. Further distrib. cosmop.

*P. TOMENTOSA*, var. (?) *PUMILA*, Hook. f. (3), 194 (where by typographical error published as *Plumbago*), & (4), 262; Anderss. (1), 171, & (2), 65. — JAMES ISL.: *Darwin*, acc. to Hook. f., l. c. Identity doubtful.

## RUBIACEAE.

## BORRERIA, Meyer.

*B. BASALIS*, Anderss. (1), 191, & (2), 76, t. 8, f. 4. — CHATHAM ISL.: in densely grassy regions, *Andersson*. Endemic.

*B. BAURII*, Rob. & Greenm. (1), 140, 146. *Spermacoce Baurii*, Rob. & Greenm. (1), 141. — CHATHAM ISL.: lower region, southwest end, *Baur*, no. 144 (hb. Gr.). Endemic.

*B. DISPERSA*, Hook. f. (3), 217; Anderss. (1), 191, & (2), 76, t. 8, f. 1; Rob. & Greenm. (1), 146. — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 137 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 215 (hb. Gr.). CHARLES ISL.: *Darwin*; *Baur*. CHATHAM ISL.: southwest end, middle region, *Baur*, no. 743 (hb. Gr.). INDEFATIGABLE ISL.: grassy places of the lower region, *Andersson* (hb. Gr.). JAMES ISL.: *Darwin*. Endemic.

*B. DIVARICATA*, Hook. f. (3), 219; Anderss. (1), 193, & (2), 77; Rob. & Greenm. (1), 146. — CHARLES ISL.: *Darwin*; Cuevas Bay, *Baur*, no. 141 (hb. Gr.). Endemic.

*B. ERICAEFOLIA*, Hook. f. (3), 218; Anderss. (1), 192, & (2), 77, t. 8, f. 2; Rob. & Greenm. (1), 146. — ABINGDON ISL.: *Snodgrass & Heller*, no. 831 (hb. Gr.). ALBEMARLE ISL.: Cowley Bay, *Baur*, no. 139 (hb. Gr.); Elizabeth Bay, *Snodgrass & Heller*, no. 275 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 38 (hb. Gr.); mountain east of Tagus Cove, alt. 615 m., *Snodgrass & Heller*, no. 236 (hb. Gr.); southern portion, *Baur*, no. 137 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 157 (hb. Gr.). CHARLES ISL.: Cormorant Bay, *Baur*, no. 138 (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson*. NARBOROUGH ISL.: Mangrove Point, common, scattered in crevices of lava from the beach to 615 m. alt., *Snodgrass & Heller*, no. 308 (hb. Gr.). Endemic. The forms here included in this species differ from each other somewhat in the size, acuteness and pubescence of the leaves. It is not improbable that some of them may be *B. basalis*, Anderss., *B. parvifolia*, Hook. f., or *B. falcifolia*, Hook. f., nearly related species which, to judge from the material at hand, do not appear likely to prove distinct in nature.

*B. FALCIFOLIA*, Hook. f. (3), 219; Anderss. (1), 193, & (2), 77. *B. lancifolia*, Anderss. (1), 191, & (2), 76, evidently a typographical error for *falcifolia*. — ALBEMARLE ISL.: *Macrae*? acc. to Hook. f., l. c. Endemic.

*B. GALAPAGEIA*, Rob. & Greenm. (1), 140, 146. *Spermacoce galapageia*, Rob. & Greenm. (1), 141. — DUNCAN ISL.: *Baur*, no. 145 (hb. Gr.). Endemic.

*B. LINEARIFOLIA*, Hook. f. (3), 217; Anderss. (1), 191, & (2), 76. — JAMES ISL.: *Darwin*. Endemic.

*B. OVALIS*, Anderss. (1), 192, & (2), 76, t. 8, f. 3. Leaves 6 to 8 mm. long, rounded at the apex. — CHARLES ISL.: in dry and grassy places on the upper part of the island, *Andersson* (hb. Gr.). Endemic.

Forma *abingdonensis*. *B. ovalis*, Rob. & Greenm. (1), 149, as to pl. Abingdon. Foliis ad 1.5 cm. longis plus minusve acutis. — ABINGDON ISL.: *Baur*, no. 142 (hb. Gr.). Endemic.

*B. PACIFICA*, Rob. & Greenm. (1), 140, 146. *Spermacoce pacifica*, Rob. & Greenm. (1), 141. — INDEFATIGABLE ISL.: south of Conway Bay, *Baur*, no. 146 (hb. Gr.). Endemic.

*B. PARVIFOLIA*, Hook. f. (3), 218; Anderss. (1), 193, & (2), 77. — GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: *Macrae*. Endemic. A pubescent form of *B. ericaefolia*?

*B. PERPUSILLA*, Hook. f. (3), 218; Anderss. (1), 192, & (2), 77. — JAMES ISL.: *Darwin*. Endemic.

*B. ROTUNDIFOLIA*, Anderss. (2), 77. — INDEFATIGABLE ISL.: in grassy places, *Andersson*. Endemic.

*B. SUBERECTA*, Hook. f. (3), 217; Anderss. (1), 191, & (2), 76. *B. linearifolia*, Rob. & Greenm. (1), 146 (at least in part), not Hook. f. — ALBEMARLE ISL.: *Macrae*; Iguana Cove, *Snodgrass & Heller*, no. 129 (hb. Gr.); southern part, *Baur*, nos. 135 (hb. Gr.), 140 (hb. Gr.); Tagus Cove, near beach, *Snodgrass & Heller*, no. 204 (hb. Gr.), probably the forma  $\beta$  of Hook. f., l. c. BARRINGTON ISL.: *Baur* (identity doubtful). Endemic.

*B. sp.* Slender simple stems 5 to 7 cm. high from an apparently annual root: leaves oblong-lanceolate, hispidulous on and near the strongly revolute margin. — CHATHAM ISL.: *Snodgrass & Heller*, no. 536 (hb. Gr.). Perhaps a distinct species, but more probably a starved state of one of the above.

#### CHIOCocca, P. Br.

*C. RACEMOSA*, L. Syst. ed. 10, 917 (1760); Jacq. Stirp. Am. 68; Hook. f. (3), 220; Anderss. (1), 195, & (2), 78. *C. trisperma*, Hook. f. (3), 219; Anderss. (1), 194, & (2), 78, t. 9, f. 2. *C.?* Hook. f. (3), 220. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 823 (hb. Gr.). ALBEMARLE ISL.: *Macrae*; *Andersson*; Elizabeth Bay, *Snodgrass & Heller*, no. 267 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, nos. 60 (hb. Gr.), 874 (hb. Gr.); Tagus Cove, 150 to more than 650 m., *Snodgrass & Heller*, nos. 144 (hb. Gr.), 172 (hb. Gr.), 899 (hb. Gr.); mountain east of Tagus Cove, alt. 620 m., *Snodgrass & Heller*, no. 235 (hb. Gr.), alt. 930 m., *Snodgrass & Heller*, no. 234 (hb. Gr.). BINDLOE ISL.: *Snodgrass & Heller*, no. 789 (hb. Gr.). CHARLES ISL.: *Andersson* (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson*. JAMES ISL.: *Scouler*. NARBOROUGH ISL.: southern part, 300 to 600 m. alt., scattered but common, 3 to 5 m. in height, *Snodgrass & Heller*, no. 350 (hb. Gr.). Widely distrib. in trop. Am. The size of the leaves varies greatly, and changes somewhat with the age of the plant; the fruit is often 2-carpelled and 3-carpelled on the same individual.

#### DIODIA, L.

*D. RADULA*, Cham. & Schlecht. Linnaea, iii. 342 (1828); Schumann in Mart. Fl. Bras. vi. pt. 6, 25. *Borreria* (*Spermacoce asperifolia*, Mart.



& Gal. ?), Rob. & Greenm. (1), 146. — CHATHAM ISL.: southwest end, upper region, *Baur*, no. 147 (hb. Gr.). Further distrib. Brazil.

#### PSYCHOTRIA, L.

*P. ANGUSTATA*, Anderss. (1), 193, & (2), 78, t. 9, f. 1. Probably *P. sp.*? Hook. f. (3), 220. — CHARLES ISL.: *Darwin*?; in most fertile forest regions of the island, *Andersson*. Endemic.

*P. RUFIPES*, Hook. f. (3), 220; Anderss. (1), 193, & (2), 77; Rob. & Greenm. (1), 146. — ABINGDON ISL.: *Snodgrass & Heller*, no. 817 (hb. Gr.), ALBEMARLE ISL.: Iguana Cove, below 300 m. alt., *Snodgrass & Heller*, nos. 117 (hb. Gr.), 864 (hb. Gr.), 865 (hb. Gr.). CHARLES ISL.: in the most fertile forests, *Andersson*; *Lee* (hb. U. S. Nat. Mus.). CHATHAM ISL.: southwest end, middle region, *Baur*, no. 148 (hb. Gr.). JAMES ISL.: *Darwin*. Endemic.

#### RELBUNUM, Benth. & Hook. f.

*R. sp.* *Rubia sp.* Hook. f. (3), 216; Anderss. (1), 190, & (2), 75; near *R. Relbun*. — CHARLES ISL.: *Darwin*. Further distrib. Peru, acc. to Hook. f., l. c.

#### SPERMACOCE, L.

*S. TENUIOR*, L. Sp. 102 (1753), excl. syn. Dill.; Hook. f. (3), 219; Anderss. (1), 193, & (2), 77; Rob. & Greenm. (1), 146. — CHATHAM ISL.: southwest end, upper region, *Baur*, no. 136 (hb. Gr.). JAMES ISL.: *Darwin*. Widely distrib. in trop. and subtrop. Am.

### CUCURBITACEAE.

#### CITRULLUS, Neck.

*C. VULGARIS*, Schrad. ex Eckl. & Zeyh. Enum. 279 (1836), & Linnaea, xii. 412; Cogn. in DC. Monogr. iii. 508. *Cucurbita Citrullus*, L. Sp. 1010 (1753). *Cucumis Citrullus*, Ser. in DC. Prodr. iii. 301 (1828); Anderss. (1), 224, & (2), 95. — CHARLES ISL.: *Andersson*, no. 166. Widely distrib. in warm countries.

#### CUCURBITA, L.

*C. PEPO*, L. Sp. 1010 (1753); Cogn. in DC. Monogr. iii. 545. *C. Melopepo*, L. l. c.; Anderss. (1), 223, & (2), 94. CHARLES ISL.: cultivated ground, upper region, *Andersson*. Cosmopolitan.

## ELATERIUM, Jacq.

*E. CORDATUM*, Hook. f. (3), 224; Anderss. (1), 224, & (2), 95; Cogn. in DC. Monogr. iii. 859. — JAMES ISL.: *Darwin* (hb. Kew); *Andersson*. Endemic.

## MOMORDICA, L.

*M. CHARANTIA*, L. Sp. 1009 (1753); Sims, Bot. Mag. t. 2455; Cogn. l. c. 436; Rob. & Greenm. (1), 146 (*Charanta*). — ALBEMARLE ISL.: southern part, *Baur*, no. 158 (hb. Gr.). Widely distrib. in trop. reg.

## SICYOS, L.

*S. VILLOSUS*, Hook. f. (3), 223; Anderss. (1), 224, & (2), 95; Cogn. l. c. 874. — CHARLES ISL.: *Darwin*, acc. to Hook. f. Endemic.

## CAMPANULACEAE.

## LOBELIA, L.

*L. XALAPENSIS*, HBK. Nov. Gen. et Sp. iii. 315 (1818); Hook. f. (3), 206; Anderss. (1), 190, & (2), 75. — CHARLES ISL. and JAMES ISL.: acc. to Hook. f., probably collected by *Darwin* as suggested by *Andersson*. Further distrib. Mex., W. Ind., S. Am. to Peru.

## GOODENIACEAE.

## SCAEVOLA, L.

*S. LOBELIA*, Murr. Syst. ed. 13, 178 (1774). *S. Plumieri*, Vahl, Symb. ii. 36 (1791); Hook. f. (3), 205; Anderss. (1), 190, & (2), 75. *Lobelia Plumieri*, L. Sp. 929 (1753). — GALAPAGOS IDS.: *Edmonston* (hb. Gr.). CHATHAM ISL.: *Darwin*; *Andersson*. Widely distrib. in warm countries.

## COMPOSITAE.

## ACANTHOSPERMUM, Schrank.

*A. LECOCARPOIDES*, Rob. & Greenm. (1), 141, 146. — HOOD ISL.: *Baur*, no. 128; *Snodgrass & Heller*, no. 744 (hb. Gr.). Endemic.

*A. microcarpum*, nov. sp., annuum erectum ramosum 3 dm. altum; caule terete albide hirsuto; foliis oppositis obovato-rhomboides crenulatis vel obsolete dentatis 3-nervatis parce hirsutis subtus haud vel paulo pali-

dioribus apice obtusis basi longiuscule angustatis sessilibus 3-4.5 cm. longis 1.5-2 cm. latis; capitulis sessilibus; involucri squamis exterioribus 4-6 oblongis obtusis conspicue ciliatis 4 mm. longis; fructibus triangularibus 6 mm. longis compressis pallidis minute granulatis et spinis brevibus conicis haud vel paulo uncinatis armatis; floribus disci circa 7; corollis pallidis, tubo gracile faucibus subnullis limbo ampliato. — CHARLES ISL.: May, 1899, *Snodgrass & Heller* no. 446 (hb. Gr.). Endemic. Nearly related to *A. hispidum*, DC., but differing considerably in the fruit, as will be seen from PLATE 1, FIGURES 3 and 4, where the fruits of both species are contrasted.

#### AGERATUM, L.

*A. LATIFOLIUM*, Hemsl. Biol. Cent.-Am. Bot. ii. 82 (1881), not Cav. (*Coelestina latifolia*, Benth. in Oerst. Vidensk. Meddel. 1852, p. 71; Anderss. (1), 175, & (2), 67; Caruel (1), 623. *A. conyzoides*, Hook. f. (3), 207; Anderss. (1), 175, & (2), 67; Rob. & Greenm. (1), 146; not L. — CHARLES ISL.: Darwin; Andersson; Baur; *Snodgrass & Heller*, no. 423 (hb. Gr.). CHATHAM ISL.: *Chierchia*, acc. to Caruel, l. c. Further distrib. Costa Rica.

#### APLOPAPPUS, Cass.

*A. LANATUS*, Hook. f. (3), 215; Anderss. (1), 177, & (2), 68 (*Haplopappus*). — GALAPAGOS IDS.: *Du Petit-Thouars*. Endemic.

#### BACCHARIS, L.

*B. PILULARIS*, DC. Prodr. v. 407 (1836); Hook. f. (4), 261; Anderss. (1), 178, & (2), 69; Gray, Syn. Fl. i. pt. 2, 222. — CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c. Further distrib. coastal region of California and Oregon. I cannot avoid a suspicion that the Galapageian plant (of which I have seen no specimen) will prove to be not the Californian species but one of several habitally similar plants of trop. S. Am.

*B. PINGRAEA*, DC., var. *ANGUSTISSIMA*, DC. Prodr. v. 420 (1836); Rob. & Greenm. (1), 146. — ALBEMARLE ISL.: eastern part, Cowley Bay, *Baur*, no. 124 (hb. Gr.); mountain east of Tagus Cove, alt. 960 m., *Snodgrass & Heller*, no. 242 (hb. Gr.). Identification doubtful. Further distrib. coast of Chili.

*B. STEETZII*, Anderss. (1), 177, & (2), 68. — CHARLES ISL.: in dry places in the middle of the island, *Andersson* (hb. Gr.).

## BIDENS, L.

*B. CHILENSIS*, DC. Prodr. v. 603 (1836). — ALBEMARLE ISL.: Tagus Cove, 1230 m. alt., *Snodgrass & Heller*, no. 887 (hb. Gr.). Further distrib. Chili.

*B. PILOSA*, L. Sp. 832 (1753). *B. leucantha*, Willd. Sp. iii. 1719 (1804); Anderss. (1), 187, & (2), 74; Caruel (1), 623; Rob. & Greenm. (1), 147. — ALBEMARLE ISL.: *Andersson*. CHARLES ISL.: *Andersson*. CHATHAM ISL.: *Andersson*; *Chierchia*; southwest end, middle region, *Baur* (hb. Gr.); *Snodgrass & Heller*, no. 534 (hb. Gr.). Widely distrib. in trop. reg.

*B. REFRACTA*, Brandege, Zoe, i. 310 (1890). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 92 (hb. Gr.); Tagus Cove, not common inland at 150 to 300 m. alt., *Snodgrass & Heller*, no. 178 (hb. Gr.). CHARLES ISL.: *Snodgrass & Heller*, no. 420 (hb. Gr.). HOOD ISL.: *Snodgrass & Heller*, no. 732 (hb. Gr.). JAMES ISL.: James Bay, most abundant herb, growing everywhere in shade of bushes on lava soil, *Snodgrass & Heller*, no. 380 (hb. Gr.). NARBOROUGH ISL.: southern part, abundant at 600 m. alt., *Snodgrass & Heller*, nos. 316 (hb. Gr.), 338 (hb. Gr.). Probably a recent introduction from Mexico or Lower California. Palmer's no. 923 (coll. of 1890) from Manzanillo, Mexico, appears to be identical. PLATE 2, FIG. 4 (drawn from a Galapageian specimen).

## BLAINVILLEA, Cass.

*B. RHOMBOIDEA*, Cass. Dict. xxix. 493 (1823); Anderss. (1), 178, & (2), 69; Rob. & Greenm. (1), 146. *Verbesina dichotoma*, Murr. Comm. Goett. ii. 15, t. 4 (1779). — ALBEMARLE ISL.: *Lee* (hb. U. S. Nat. Mus.); Iguana Cove, *Snodgrass & Heller*, no. 99 (hb. Gr.); Tagus Cove, growing everywhere in tufa soil up to 300 m. alt., *Snodgrass & Heller*, no. 184 (hb. Gr.). BARRINGTON ISL.: *Snodgrass & Heller*, no. 482 (hb. Gr.). CHARLES ISL.: *Baur*, no. 118 (hb. Gr.); *Snodgrass & Heller*, no. 442 (hb. Gr.). CHATHAM ISL.: *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 535 (hb. Gr.). DUNCAN ISL.: *Baur*, no. 119 (hb. Gr.); *Snodgrass & Heller*, no. 698 (hb. Gr.). HOOD ISL.: *Baur*, no. 117 (hb. Gr.); *Snodgrass & Heller*, no. 720 (hb. Gr.). INDEFATIGABLE ISL.: *Andersson*; northern part, *Snodgrass & Heller*, no. 681 (hb. Gr.). JAMES ISL.: James Bay, common in lava soil, *Snodgrass & Heller*, no. 389 (hb. Gr.). NARBOROUGH ISL.: southern part, tolerably common at 615 m. alt., *Snodgrass & Heller*, no. 314a (hb.

Gr.). SEYMOUR ISL.: north, *Snodgrass & Heller*, no. 563 (hb. Gr.); south, *Snodgrass & Heller*, no. 600 (hb. Gr.). Widely distrib. weed in trop. reg. Apparently of recent introduction in the Galapagos Ids.

B. TENUICAULIS, Benth. & Hook. f. Gen. Pl. ii. 370. *Wedelia tenuicaulis*, Hook. f. (3), 213; Anderss. (1), 179, & (2), 69; and doubtfully acc. to Hook. f. & Jacks. Ind. Kew. ii. 1226, *Wedelia frutescens*, Hook. f. (4), 261; Anderss. (1), 179, & (2), 69; not Jacq. — ALBEMARLE ISL.: *Macrae*. CHARLES ISL.: *Edmonston* (identity doubtful). Endemic.

#### BRICKELLIA, Ell.

B. DIFFUSA, Gray, Pl. Wright. i. 86 (1852). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, nos. 51 (hb. Gr.), 72 (hb. Gr.), 93 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 214 (hb. Gr.). Further distrib. Mex. to Braz. Apparently of recent introduction on the Galapagos Islands.

#### CHRYSANTHELLUM, Rich.

C. ERECTUM, Anderss. (1), 188, & (2), 74. *C. pusillum*, Rose (1), 137, in part (as to pl. Chatham Isl.). — CHATHAM ISL.: *A. Agassiz* (hb. U. S. Nat. Mus.); *Snodgrass & Heller*, nos. 505 (hb. Gr.), 538 (hb. Gr.). INDEFATIGABLE ISL.: in the most grassy places of lower region. *Andersson* (hb. Gr.). NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, no. 314 (hb. Gr.). Endemic.

C. PUSILLUM, Hook. f. (3), 214; Anderss. (1), 188, & (2), 74, t. 6, f. 2; Rose (1), 137, in part (only as to pl. Charles). — ALBEMARLE ISL.: *Darwin*. CHARLES ISL.: in dry somewhat grassy places of lower region, *Andersson* (hb. Gr.); *A. Agassiz* (hb. Gr.); *Snodgrass & Heller*, no. 413 (hb. Gr.) CHATHAM ISL.: *Andersson*. Endemic.

#### ECLIPTA, L.

E. ERECTA, L. Mant. ii. 286 (1771); Caruel (1), 623. *E. alba*, Hassk. Pl. Jav. Rar. 528 (1848); Rob. & Greenm. (1), 146. *E. procumbens*, Michx. Fl. Bor. Am. ii. 129 (1803). — CHARLES ISL.: *Snodgrass & Heller*, no. 417 (hb. Gr.). CHATHAM ISL.: *Chierchia*, acc. to Caruel, l. c.; southwest end, middle region, *Baur*, no. 106 (hb. Gr.); *Snodgrass & Heller*, no. 539 (hb. Gr.). HOOD ISL.: on margin of a mud lake, *Snodgrass & Heller*, no. 721 (hb. Gr.). A widely distributed weed, probably of recent introduction on the Galapagos.

## ELVIRA, Cass.

*E. inelegans*. *Desmocephalum inelegans*, Hook. f. (3), 209; Anderss. (1), 178, & (2), 69. — CHARLES ISL.: *Darwin*. Endemic.

*E. repens*. *Microcoecia repens*, Hook. f. (3), 209; Anderss. (1), 179, & (2), 69. — ALBEMARLE ISL.: Tagus Cove, alt. 1230 m., *Snodgrass & Heller*, no. 880 (hb. Gr.). JAMES ISL.: *Darwin* (hb. Gr.). Endemic. The plant from Albemarle Island differs from the original material from James Island in not rooting at the lower nodes. Furthermore, the outer bract of the involucre is broadly obovate and subtruncate instead of acuminate as described by Hooker. Mr. W. B. Hemsley has been so kind as to compare the Albemarle plant with some of the original material at Kew and regards them as the same species. A fragment of the Darwin plant, sent many years ago by Mr. Bentham to Dr. Gray, is unfortunately sterile, but agrees closely with the Albemarle plant in all vegetative features except in its evident repent character.

## ENCELIA, Adans.

*E. hispida*, Anderss. (1), 186, & (2), 73. — CHARLES ISL.: *Andersson*. CHATHAM ISL.: in dry grassy places of lower region, *Andersson* (hb. Gr.). Endemic.

## ERIGERON, L.

*E. lancifolius*, Hook. f. (3), 208; Anderss. (1), 176, & (2), 67. — ALBEMARLE ISL.: *Darwin*; Elizabeth Bay, *Snodgrass & Heller*, no. 278 (hb. Gr.); Point Christopher, *Snodgrass & Heller*, no. 930 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 909 (hb. Gr.). NARBOROUGH ISL.: southern part, common, bushes 6 to 9 dm. high, 150 to 600 m. alt., *Snodgrass & Heller*, no. 328 (hb. Gr.), leaves acute; and no. 344 (hb. Gr.), leaves obtusish to rounded. (Obviously only foliar forms of the same species.) Endemic.

*E. linifolius*, Willd. Sp. iii. 1955 (1804); Gray, Syn. Fl. i. pt. 2, 221. *E. sp.* Rob. & Greenm. (1), 146. *Conyza ambigua*, DC. Fl. Fr. Suppl. 468 (1815). — CHARLES ISL.: *Baur*, no. 120 (hb. Gr.). Widely distrib. in trop. and subtrop. reg.

*E. tenuifolius*, Hook. f. (3), 207; Anderss. (1), 176, & (2), 68 (as to pl. *Darwin*); Rob. & Greenm. (1), 146. — ABINGDON ISL.: *Snodgrass & Heller*, no. 841 (hb. Gr.). ALBEMARLE ISL.: mountain north of Elizabeth Bay, *Snodgrass & Heller*, no. 295 (hb. Gr.); mountain east of Tagus Cove, *Snodgrass & Heller*, nos. 237 (hb. Gr.), 253 (hb.



Gr.); southern part, *Baur*, no. 121 (hb. Gr.); Tagus Cove, alt. 1250 m., *Snodgrass & Heller*, no. 889 (hb. Gr.). CHARLES ISL.: *Darwin*. DUNCAN ISL.: *Baur*, no. 122 (hb. Gr.). JAMES ISL.: *Darwin*; James Bay, scattered along the edge of new lava flow, *Snodgrass & Heller*, no. 370 (hb. Gr.). Endemic. Leaves varying in length.

E. sp. *E. tenuifolius*, Steetz (not Hook. f.) in Anderss. (1), 176, & (2), 68; Rob. & Greenm. (1), 146. — CHARLES ISL.: *Andersson* (hb. Gr.); *Baur*, no. 123 (hb. Gr.). Endemic. Unfortunately known only from sterile specimens.

#### EUPATORIUM, L.

E. FILICAULE, Sch. Bip. in Gray, Proc. Am. Acad. xxi. 384 (1886). — ALBEMARLE ISL.: Iguana Cove, *Snodgrass & Heller*, no. 29 (hb. Gr.). Further distrib. Mex. to Venezuela. The Galapageian plant has a slightly denser inflorescence and more copious and sordid indumentum than the Mexican, but good floral differences do not appear.

E.? sp. Hook. f. (4), 261. — CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c. Endemic? *Andersson* (1), 189, & (2), 74, suggests the possibility that this may be *Flaveria Contrayerba*, Pers.

#### FLAVERIA, JUSS.

F. CONTRAYERBA, Pers. Syn. ii. 489 (1807); DC. Prodr. v. 635; *Anderss.* (1), 189, & (2), 74. — CHARLES ISL.: *Andersson*. Further distrib. trop. Am.

#### HEMIZONIA, DC.

H. SQUALIDA, Hook. f. (3), 208; *Anderss.* (1), 190, & (2), 75. — GALAPAGOS IDS.: *Du Petit-Thouars*, acc. to Hook. f., l. c. Endemic.

#### JAEGERIA, HBK.

J. GRACILIS, Hook. f. (3), 213; *Anderss.* (1), 179, & (2), 69. — CHARLES ISL.: *Darwin*. Endemic. From the description of the involucre this can hardly be a *Jaegeria*.

J. PROREPENS, Hook. f. (3), 214; *Anderss.* (1), 179, & (2), 69; Robinson, Proc. Am. Acad. xxxv. 318. — JAMES ISL.: *Darwin*. Endemic. Neither this nor the preceding has been secured by any other collector.

#### LECOCARPUS, Decaisne.

L. FOLIOSUS, Decaisne, Bot. Voy. Venus, 20 (1864). *L. pinnatifidus*, Decaisne, l. c. t. 14 of Atlas; Hook. f. (3), 210 (identity of the

forms with less cut leaves may be doubted); Anderss. (1), 186, & (2), 73; Rob. & Greenm. (1), 146. — GALAPAGOS IDS.: (presumably CHARLES) Edmonston (hb. Gr.); *Habel*. CHARLES ISL.: *Darwin*; *Du Petit-Thouars*; in dry places, upper region, *Andersson* (hb. Gr.); *Baur*. CHATHAM ISL.: *Darwin*, acc. to Hook. f. Endemic.

#### LIPOCHAETA, DC.

L. LARICIFOLIA, Gray, Proc. Am. Acad. v. 131 (1862); Rose (1), 137. *Macraea laricifolia*, Hook. f. (3), 210; Anderss. (1), 186, & (2), 72; Caruel (1), 623; Rob. & Greenm. (1), 147. *Trigonopterum Ponteni*, Anderss. (1), 184, & (2), 72, t. 6, f. 1. *Lippia?* Rob. & Greenm. (1), 147. — GALAPAGOS IDS.: *Habel*. ABINGDON ISL.: *Snodgrass & Heller*, no. 830 (hb. Gr.). ALBEMARLE ISL.: *Darwin*; *Macrae*; *Andersson*; Cowley Bay, *Baur*, nos. 181 (hb. Gr.), 182 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, nos. 146 (hb. Gr.), 913 (hb. Gr.); common bush on hills near the cove and to 180 m. alt., also inland to 450 m., *Snodgrass & Heller*, no. 166 (hb. Gr.). CHARLES ISL.: *Darwin*; wooded region, middle of the island, *Andersson* (hb. Gr.); *Lee* (hb. U. S. Nat. Mus.); *A. Agassiz*; *Baur*, no. 126 (hb. Gr.); *Snodgrass & Heller*, no. 408 (hb. Gr.). CHATHAM ISL.: *Chierchia*; southwest part, *Baur*, no. 127 (hb. Gr.). NARBOROUGH ISL.: southern part, bushes 1.3 to 2 m. high at 320 to 650 m. alt., *Snodgrass & Heller*, no. 335 (hb. Gr.). Endemic. A species of special interest, showing the strongest of several on the whole rather slight traces of affinity between the flora of the Galapagos Islands and that of the Sandwich Islands (on which occur the remaining species of this small genus).

#### PECTIS, L.

P. *Anderssonii*. P. *linearis*, Rob. & Greenm. (1), 147, not La Llave. *Lorentia linearis*, Anderss. (1), 174, & (2), 66. — INDEFATIGABLE ISL.: alt. 60 m., *Andersson*; south of Conway Bay, *Baur*, no. 125 (hb. Gr.). Endemic.

P. *Hookeri*. *Lorentia gracilis*, Hook. f. (3), 206; Anderss. (1), 174, & (2), 66. *Pectis gracilis*, Rob. & Greenm. (1), 147 (excl. pl. Chatham), not Baker. — ALBEMARLE ISL.: *Macrae*. BARRINGTON ISL.: *Baur*, no. 115 (hb. Gr.); *Snodgrass & Heller*, no. 465 (hb. Gr.). CHARLES ISL.: *Baur*. HOOD ISL.: *Snodgrass & Heller*, no. 726 (hb. Gr.). JAMES ISL.: James Bay, abundant on lava rocks near beach, *Snodgrass & Heller*, no. 378 (hb. Gr.). JERVIS ISL.: *Baur*, no. 114 (hb. Gr.). SEYMOUR ISL.: south, *Snodgrass & Heller*, no. 592 (hb. Gr.). Endemic.

*P. LINIFOLIA*, L. Syst. Nat. ed. 10, 1221 (1760); Fernald, Proc. Am. Acad. xxxiii. 85. *P. punctata*, Jacq. Enum. Pl. Carib. 28 (1762), & Stirp. Am. 216, t. 128; Gray, Syq. Fl. i. pt. 2, 362. *Verbesina linifolia*, L. Syst. Nat. ed. 10, 1226 (1760). *Pectidium punctatum*, Less. Linnaea, vi. 707 (1831); DC. Prodr. v. 98; Anderss. (1), 172, & (2), 65. *P. subciliaris*, Anderss. (1), 174, & (2), 66. — CHATHAM ISL.: Andersson. INDEFATIGABLE ISL.: Andersson. SEYMOUR ISL.: south, Snodgrass & Heller, no. 591 (hb. Gr.). Further distrib. Mex., W. Ind., northern S. Am. Several forms are distinguished by Andersson.

*P. SUBSQUARROSA*, Sch. Bip. in Seem. Bot. Herald, 309 (1852-1857). *Lorentia subsquarrosa*, Hook. f. (3), 206. — GALAPAGOS IDS.: Hubel. CHATHAM ISL.: Darwin. Endemic.

*P. TENUIFOLIA*, Sch. Bip. in Seem. Bot. Herald, 309 (1852-1857); Rob. & Greenm. (1), 147. *P. gracilis*, Rob. & Greenm. (1), 147, as to pl. Chatham. *Lorentia tenuifolia*, DC. Prodr. v. 103 (1836); Hook. f. (3), 206; Anderss. (1), 174, & (2), 66. *L. subsquarrosa*, Anderss. (1), 175, & (2), 67, as to pl. Albemarle. — ALBEMARLE ISL.: *Macraea* (type); Andersson; Black Bight, Snodgrass & Heller, no. 256 (hb. Gr.); eastern portion, Cowley Bay, Baur, no. 116½ (hb. Gr.); Elizabeth Bay, Snodgrass & Heller, no. 274 (hb. Gr.); southern part, Baur, no. 116 (hb. Gr.); Tagus Cove, Snodgrass & Heller, no. 148 (hb. Gr.). CHARLES ISL.: Andersson (hb. Gr.), labelled in Andersson's hand but not recorded in his published papers; Snodgrass & Heller, no. 437 (hb. Gr.). CHATHAM ISL.: Andersson (hb. Gr.); northern part, Baur, no. 112 (hb. Gr.), leaves minutely pubescent; Snodgrass & Heller, no. 537 (hb. Gr.). INDEFATIGABLE ISL.: northern part, Snodgrass & Heller, no. 665 (hb. Gr.), leaves minutely pubescent, involucre bracts acutish. SEYMOUR ISL.: north, Snodgrass & Heller, no. 573 (hb. Gr.). Further distrib. shores of Peru? *P. Burchellii*, Bak. in Mart. Fl. Bras. vi. pt. 3, 287 (1884), is habitally similar, but differs in pappus.

#### POROPHYLLUM, Vaill.

*P. ELLIPTICUM*, Cass. Dict. xliii. 56 (1826); Anderss. (1), 189, & (2), 75; Rose (1), 137; Rob. & Greenm. (1), 147. *P. ruderales*, Cass. l. c. *Cacalia Porophyllum*, L. Sp. 834 (1753); Cav. Ic. iii. 11, t. 222. — GALAPAGOS IDS.: Hubel. ABINGDON ISL.: Snodgrass & Heller, no. 848 (hb. Gr.). ALBEMARLE ISL.: Tagus Cove Mountain, Snodgrass & Heller, no. 224 (hb. Gr.). CHARLES ISL.: Andersson; Baur; Snodgrass & Heller, no. 430 (hb. Gr.). CHATHAM ISL.: Andersson (hb. Gr.);

*A. Agassiz* (hb. Gr.); southwest end, lower region, *Baur*, no. 133 (hb. Gr.); *Snodgrass & Heller*, no. 508 (hb. Gr.). DUNCAN ISL.: *Snodgrass & Heller*, no. 688 (hb. Gr.). HOOD ISL.: *Baur*, no. 131 (hb. Gr.); *Snodgrass & Heller*, no. 745 (hb. Gr.). INDEFATIGABLE ISL.: *Snodgrass & Heller*, no. 654 (hb. Gr.). JAMES ISL.: Orchilla Bay, *Baur*, no. 134 (hb. Gr.); James Bay, abundant on all kinds of soil, *Snodgrass & Heller*, no. 358 (hb. Gr.). JERVIS ISL.: *Baur*, no. 133 *bis* (hb. Gr.). Widely distrib. in trop. Am. Now one of the most abundant and generally distributed plants of the islands, but apparently of recent introduction, as it was not noted by Darwin or any of the earlier collectors. Andersson in 1852 found it upon two islands, *Baur* in 1891 upon five, and *Snodgrass & Heller* in 1899 upon seven.

#### SCALEZIA, Arn.

*S. AFFINIS*, Hook. f. (3), 212; Anderss. (1), 182, & (2), 71; Hemsl. in Hook. f. Ic. Pl. xxviii. t. 2718. — CHARLES ISL.: *Darwin*. Endemic.

*S. ASPERA*, Anderss. (1), 180, & (2), 70, t. 7, f. 3. — INDEFATIGABLE ISL.: alt. 65 m., *Andersson* (hb. Gr.). Endemic.

*S. ATRACTYLOIDES*, Arn. in Lindl. *Introd. Nat. Ord.* ed. 2, 264, 443 (1836); DC. *Prodr.* vii. 308; Hook. & Arn. in Hook. *Jour. Bot.* iii. 312; Hook. f. (3), 210; Anderss. (1), 179, & (2), 69. — GALAPAGOS IDS.: *Cuming*. A plant, from description highly characteristic, never rediscovered on the islands.

*S. BAURII*, Rob. & Greenm. (1), 141, 146. — DUNCAN ISL.: *Baur*, no. 129 (hb. Gr.). Endemic.

Var. (?) *glabrata*, foliis brevioribus magis ovatis cordatisque supra minute ruguloso-venosis glabratiss; lobulis obtusis. — DUNCAN ISL.: *Snodgrass & Heller*, no. 706 (hb. Gr.). Very near *S. Snodgrassii* but leaves shorter, more ovate, finely rugulose, less pubescent and nigrescent in drying.

*S. DARWINII*, Hook. f. (3), 211; Anderss. (1), 179, & (2), 70; Rob. & Greenm. (1), 146; Hemsl. in Hook. f. Ic. Pl. xxviii. t. 2719. — CHARLES ISL.: Cormorant Bay, *Baur*, no. 107 (hb. Gr.). JAMES ISL.: *Darwin*. Endemic.

*S. DECURRENS*, Anderss. (1), 182, & (2), 71. — ALBEMARLE ISL.: *Baur*. CHARLES ISL.: wooded region of the interior, *Andersson* (hb. Gr.); *Snodgrass & Heller*, no. 410 (hb. Gr.). Endemic.

*S. DIVISA*, Anderss. (1), 179, & (2), 70, t. 7, f. 1. — GALAPAGOS IDS.: *Habel*. CHATHAM ISL.: frequent on the lower stony parts, *Andersson* (hb. Gr.). Endemic.

*S. GUMMIFERA*, Hook. f. (3), 212; Anderss. (1), 182, & (2), 71, t. 7, f. 2. GALAPAGOS IDS.: *Habel*. ALBEMARLE ISL.: *Macrae*; in the driest places of the middle region, *Andersson*; Elizabeth Bay, *Snodgrass & Heller*, no. 266 (hb. Gr.); Tagus Cove, *Snodgrass & Heller*, no. 150 (hb. Gr.). Endemic.

*S. HELLERI*, nov. sp., frutex; ramulis molliter pilosis; novellis albidissimis, foliis oppositis bi-tripinnatisectis supra viridibus pilis brevissimis conicis scabriusculis subtus paulo pallidioribus glanduloso-puberulis et in nervis hirsutis; pedunculis ad apicem ramuli saepe tribus quam folii multo brevioribus; capitulis eradiatis; involucri hemisphaerici squamis oblongis apice rotundatis obsolete striatis; floribus omnibus ♂ numerosis: corollae puberulae tubo proprio gracile brevi in fauces conspicuas longas rectas ampliato; achenio oblongo valde compresso apice truncato calvo; paleis apice 2-3-dentatis, dentibus laciniato-ciliatis ad apiculum abrupte angustatis. — BARRINGTON ISL.: May, 1899, *Snodgrass & Heller*, no. 466 (hb. Gr.). Endemic. Leaves 8 cm. long, 5 cm. broad; petioles 1.5 to 2 cm. long covered with rather soft and widely spreading pilosity: heads 1.8 cm. in diameter. Well marked by its very deeply cut foliage and rounded involucre bracts. PLATE 1, FIGS. 9 and 10.

*S. HOPKINSII*, nov. sp., frutex; ramis teretibus pallide brunneis pilosis in specimine sicco striatulis; ramulis pilosissimis foliosis plus minusve gummiferis; foliis ovatis planis tenuibus molliter pubescentibus subtus pallidioribus subargute pinnati-lobatis, apice acutis basi subintegris acutatis; lobulis dentatis; pedunculo gracile a foliis superato piloso; capitulis eradiatis; involucri hemisphaerici squamis oblongis obovatisve acutis villosis leviter striatis; floribus omnibus ♂; corollae tubo gracili saepe curvato haud vel paulo in fauces ampliato pubescenti; achenio glabro compresso griseo calvo. — ABINGDON ISL.: 520 m. alt., June, 1899, *Snodgrass & Heller*, no. 851 (hb. Gr.). Endemic. Leaves 8 cm. long, half as broad. Petioles 2 cm. long. Heads 1.2 cm. in diameter. With its thin flat soft-pubescent leaves this can scarcely be *Mr. Hemsley's S. retroflexa* nor does it agree with any of the other species heretofore characterized. Although near *S. incisa*, Hook. f., it has more ovate leaves and acuter involucre bracts than that species. PLATE 3, FIG. 1.

*S. INCISA*, Hook. f. (3), 210; Anderss. (1), 179, & (2), 70; *Hemsl.* in Hook. f. Ic. Pl. xxviii. t. 2716. — CHATHAM ISL.: *Darwin*. Endemic.

*S. microcephala*, nov. sp., gummifera; ramulis teretibus gracilibus brunneis tenuiter griseo-puberulis, apice foliosis et corymbiferis; foliis ovato-lanceolatis vel lanceolato-oblongis integerrimis attenuato-acutissimis basi rotundato vel ad petioli insertionem subacuminatis dense tomentellis penninervatis subtus pallidioribus 4 to 6 cm. longis 2 cm. latis; petiolis gracilibus exalatis 1.5 cm. longis; capitulis pluribus graciliter pedicellatis corymbos terminales sessiles a foliis superatos formantibus eradiatis 1 cm. longis 7 mm. latis gummiferis; squamis involucri anguste campanulati lanceolato-linearibus attenuatis laxe imbricatis subaequalibus sordide pubescentibus; flosculis ♀ nullis, ♂ 9-12; corollae tubo gracillimo in fauces non ampliato 5 mm. longo minutissime puberulo, limbo 5-dentato recurvato; achenio compresso sparse pubescenti nigrescente lineari-oblongo 4 mm. longo 0.8 mm. lato summo dentes duas nunc breves nunc in aristas parvas productas gerenti; paleis conduplicatis angustis apice argute 3-dentatis puberulis. — ALBEMARLE ISL.: Tagus Cove, 20 January, 1899, *Snodgrass & Heller*, no. 910 (hb. Gr.); mountain east of Tagus Cove, alt. 770 m., *Snodgrass & Heller*, no. 254 (hb. Gr.). NARBOROUGH ISL.: abundant in southern part at 600 m. alt., forming bushes 2.6 to 4 m. high, *Snodgrass & Heller*, no. 343 (hb. Gr.). This last specimen is sterile and somewhat doubtful. It has leaves 7 cm. long and 3 cm. broad. Endemic. PLATE 3, FIGS. 2 and 3.

*S. microcephala* is well marked among its congeners by its small and more numerous heads, also by the presence of an abortive pappus. These features, however, in the presence of an otherwise close resemblance to the genus *Scalesia* do not appear to form any good ground for generic separation.

*S. narbonensis*, nov. sp., ramis fistulosis foliosis dense breviterque pubescentibus vel subvelutinis teretibus striatis; foliis alternis late ovatis, praeter basis integerrimae acuminati-attenuatae serratis acute acuminatis molliter adpresse pubescentibus, in pagina inferiore pallidioribus supra basem 3-nervatis, nervis lateralibus ramosis; petiolis distinctis semiteretibus exalatis; pedunculis in dichotomis supremis solitariis teretibus gracilibus erectis unibracteatis a foliis superatis: capitulis solitariis involucri campanulato, squamis circa 13 oblongis acutis dense pubescentibus; flosculis ♀ circa 12 squamas involucri paulo excedentibus corollis tubo gracili pubescenti in ligulam breviter oblongam pallidam 5-nervatam dilatatis, achenio pergracili tereto, abortivo: paleis oblongis puberulis valde conduplicatis apice argute 2-3-dentatis: flosculis ♀ numerosis, corollo breviter pubescenti a tubo brevi gracile in fauces teretes longiores 5-nervatis



ampliato : limbo breviter 5-dentato albo-puberulo : achenio puberulo compresso breviter oblongo apice calvo. — NARBOROUGH ISL. : northern part, *Snodgrass & Heller*, no. 297 (hb. Gr.) ; southern part, common at 650 m. alt., *Snodgrass & Heller*, no. 341 (hb. Gr.). Endemic. Leaf-blade 6 to 11 cm. long, half as broad, petioles 1 to 1.5 cm. long : heads 2 cm. in diameter ; ray-flowers including the achene 12 mm. long. This species approaches *S. affinis*, Hook. f., but differs in its alternate more finely toothed leaves, in the branched lateral leaf-nerves which (if the figure in Hook. Icon. t. 2718 be correct) are simple and marginal in *S. affinis*. *S. affinis* would from the figure seem furthermore to have a longer more hirsute type of pubescence. PLATE 3, FIGS. 4, 5, 6, and 7.

S. OVATA, Anderss. (1), 181, & (2), 70. — CHARLES ISL. : upper wooded region, *Andersson* ; *Lee* (hb. U. S. Nat. Mus.). Endemic.

S. PEDUNCULATA, Hook. f. (3), 211 ; Anderss. (1), 181, & (2), 71 ; Hemsl. in Hook. f. Ic. Pl. xxviii. t. 2717. — JAMES ISL. : *Darwin*. Endemic.

S. RETROFLEXA, Hemsl. in Hook. f. Ic. Pl. xxviii. t. 2715 (1901). — INDEFATIGABLE ISL. : *Habel*. Endemic.

*S. Snodgrassii*, nov sp. *S. Baurii* et *S. retroflexae* affinis, fruticosa, 6–9 dm. alta ; ramis teretibus glabrescentibus foliosis in specimine siccato brunneis tenuiter striatis ramulis parce pilosis et tenuissime glanduloso-puberulis ; foliis planiusculis alternis ovato-oblongis penninervatis supra pilis minutis conicis albis obstitis subtus paulo pallidioribus tenuiter pubescentibus pinnatisectis ; lobis obtusissimis et obtuse dentatis sinis angustatis ; petiolis exalatis puberulis ; pedunculis ad apicem ramuli subtribus gracilibus saepius unibracteatis puberulis et parce pilosis ; capitulis eradiatis ; involucri hemisphaerici squamis obovato-oblongis brevissime acuminatis 3–5-nervatis pubescentibus et breviter ciliatis ; floribus omnibus ♂ ; corollae tubo gracili hispidulo-puberulo saepius arcuato in fauces dilatato ; limbo 5-dentato recurvato ; achenio compresso griseo glabro apice subtruncato obsolete 2-dentato ; paleis striatis conduplicatis argute 2–3-dentatis tenuiter parceque puberulis. — WENMAN ISL. : 8 December, 1898, *Snodgrass & Heller*, no. 10 (hb. Gr.). Endemic. This species is probably nearest *S. retroflexa* recently described by Mr. Hemsley from Indefatigable Island. That, however, has the leaves recurved and somewhat crisped, of slightly different dentation and a corolla decidedly ampliate in the throat ; also villous petioles. *S. Baurii* differs in its rugulose leaves, *S. Hopkinsii* in its very different indumentum, and *S. incisa* in leaf contour and the bluntly toothed chaff. PLATE 3, FIG. 8.

*S. n. sp. ?* — ALBEMARLE ISL.: Iguana Cove, below 300 m. alt., *Snodgrass & Heller*, no. 856 (hb. Gr.); 300 to 600 m. alt., *Snodgrass & Heller*, no. 869 (hb. Gr.); Tagus Cove, 1230 m. alt., *Snodgrass & Heller*, no. 875 (hb. Gr.). Differing from all the other species in its large broadly ovate more or less cordate subentire leaves. Unfortunately all the specimens are sterile so that there is a slight doubt as to the genus. Endemic.

SONCHUS, L.

*S. OLERACEUS*, L. Sp. 794 (1753). — ALBEMARLE ISL.: *Snodgrass & Heller*, no. 908 (hb. Gr.); Iguana Cove, *Snodgrass & Heller*, no. 50 (hb. Gr.). CHARLES ISL.: *Snodgrass & Heller*, no. 404 (hb. Gr.). Cosmop. weed.

SPILANTHES, L.

*S. ACMELLA*, Murr. Syst. ed. 13, 610 (1774); Hook. f. (4), 261; Anderss. (1), 188, & (2), 74. — CHARLES ISL.: *Edmonston*, acc. to Hook. f., l. c. NARBOROUGH ISL.: southern part, *Snodgrass & Heller*, no. 315 (hb. Gr.). Sterile and doubtful. Widely distrib. in trop. reg.

*S. DIFFUSA*, Hook. f. (3), 214; Anderss. (1), 188, & (2), 74. — CHARLES ISL.: *Darwin*. JAMES ISL.: in a smaller form, *Darwin*, acc. to Hook. f., l. c. Endemic.

TAGETES, L.

*T. ERECTA*, L. Sp. 887 (1753); Caruel (1), 623. — CHATHAM ISL.: *Chierchia*, acc. to Caruel, l. c. Widely distrib. in warm reg. as a result of cult.

TABLE I. — BOTANICAL COLLECTIONS<sup>1</sup> UPON THE GALAPAGOS ISLANDS.

[The numbers relate exclusively to Pteridophytes and Spermatophytes.]

| Collector.  | Vessel, etc.   | Date.                      | Islands visited.                             | Collection determined by.                                      | Remarks.  | No. specimens recorded (excl. duplicates). | Plants <sup>2</sup> new to Archipelago. | Plants <sup>2</sup> new to Science. | Specimens examined in preparing this paper. |
|---|--|----------------------------|--|--|---|--|---|-------------------------------------|---|
| David Douglas.<br>Dr. John Scouler. }                   | Brig <i>William &amp; Ann</i> ,<br>Capt. Hanwell (British).                  | 9-12 Jan., 1826.           | James.                                       | Sir J. D. Hooker.  | Cf. Comp. Bot. Mag. ii. 86-97.                          | 23   | 23                                      | 8                                   | 1   |
| James Macrae.   | Frigate <i>Blonde</i> , Com-<br>mand. Lord George<br>Ainson Byron (British). | 26 Mar.-2 Apr.,<br>1826.   | Albemarle.                                   | Sir J. D. Hooker.  | Cf. Trans. Hort. Soc. London, vii. 113, & vi. p. 11.    | 41   | 34                                      | 20                                  | 2   |
| Hugh Cuming.  | Private yacht.   | 1829.                      | Unascertained.                               | Ferns by Sir W. J. Hooker.                                     | Cf. Journ. Bot. iii. 325-326.                           | 9  | 4                                       | 2                                   | 0   |
| Charles Darwin.   | H. M. S. <i>Beagle</i> , Capt.<br>Fitz Roy (British).                        | 16 Sept.-20 Oct.,<br>1835. | Albemarle.<br>Charles.<br>Chatham.<br>James. | Sir J. D. Hooker;<br>bryophytes by Wil-<br>son.                | Plants chiefly<br>in herb. Cam-<br>bridge Univ.         | 209  | 154                                     | 78                                  | 1   |
| Adm. Abel Du Petit-Thouars.<br>Adolphe-Simon Neboeur. } | Frigate <i>Venus</i><br>(French).  | 21 June-15 July,<br>1838.  | Charles.                                     | Joseph Decaisne.<br>Sir J. D. Hooker.<br>Cuscutaceae by Weber. | Plants in herb.<br>Musée d'Hist.<br>Nat., Paris.        | 5  | 3                                       | 3                                   | 1   |
| Thomas Edmonstone.<br>Dr. John Goodridge. }             | H. M. S. <i>Herald</i> ,<br>Capt. Beechey (British).                         | 6-16 Jan., 1846.           | Charles.<br>Chatham.<br>James.               | Sir J. D. Hooker.  |   | 41   | 21                                      | 3                                   | 13  |
| Capt. James Wood, R.N.                                  | H. M. S. <i>Pandora</i><br>(British).  | 6-16 Jan., 1846.           | Charles.<br>Chatham.                         | Ferns by Sir W. J. Hooker.                                     | 44 ferns re-<br>ceived at the<br>Kew Garden<br>in 1854. | 27   | 15                                      | 0                                   | 0   |

<sup>1</sup> In addition to the collections here recorded I find references to two plants collected on the Galapagos Islands by a Mr. King, and there is one specimen in the Gray Herbarium said to have been collected on the Galapagos Islands by a Mr. Brace.

<sup>2</sup> By plants are here meant species, varieties, and named forms of pteridophytes and spermatophytes.

TABLE I. — Continued.

| Collector.   | Vessel, etc.   | Date.                     | Islands visited.                                   | Collection determined by.  | Remarks.   | No. specimens recorded (excl. duplicates). | Plants new to Archipelago. | Plants new to Science. | Specimens examined in preparing this paper. |
|--|--|---------------------------|--|--|--|--|----------------------------|------------------------|---|
| Prof. N. J. Andersson.                                 | <i>Frigate Eugenie</i> , Rear Adm. C. A. Virgin (Swedish). | 11-20 May, 1852.          | Albemarle, Charles, Chatham. Indefatigable, James. | Phanerogams, ferns, etc., by Prof. N. J. Andersson. Mosses by J. Augström.       |  | 325  | 111                        | 50                     | 99  |
| Dr. A. Habel.  |  | 22 July, 1868-Jan., 1869. | Abington. Bindloe. Hood. Indefatigable.            | 69 species named at Kew.   | 28 specimens now in hb. Kew.   | 69   | 8                          | 2                      | 0   |
| Dr. Thomas Hill.<br>Dr. Franz Steindachner. }          | <i>Hassler</i> , Capt. Philip C. Johnson (American).       | 10-19 June, 1872.         | Albemarle, Charles, Indefatigable, James, Jeria.   | A few plants cited in scattered monographs; the lichens determined by Tuckerman. | Plants of Steindachner in hb. Naturh. Mus. Vienna; lichens and algae of Hill in Crypt. hb. Harvard Univ. | 96   | 2                          | 1                      | 2   |
| Dr. Theodor Wolf.                                      | <i>Venecia</i> , Capt. Petersen (Ecuadorian).              | Aug., 1875.               | Albemarle, Charles, Chatham. Indefatigable.        | Dr. T. Wolf.   | Dr. Wolf states that all his plants were destroyed during storage in Guayaquil.                          | 7  | 6                          | 0                      | 0   |
| Lieut. Gaetano Chierchia.<br>Lieut. Cesare Marsaccl. } | Sloop <i>Vettor Pisani</i> , Capt. G. Palumbo (Italian).   | 31-31 Mar., 1884.         | Charles, Chatham.                                  | Phanerogams by Prof. T. Caruel. Algae by A. Piccone.                             | Lieut. Marsaccl appears to have collected only algae.  | 44   | 22                         | 2                      | 0   |

|  |  |                              |   |  |   |     |    |    |     |
|--|--|------------------------------|---|--|---|-----|----|----|-----|
| Prof. Leslie A. Lee.                   | S. S. <i>Albatross</i> , Lieut.<br>Com. Z. L. Tan-<br>ner U. S. N. (Ameri-<br>can).            | 5-11 Apr., 1888.             | Albemarle.<br>Charles<br>Chatham.<br>Hood.<br>James.  | B. L. Robinson.  | Plants in U. S.<br>Nat. Museum,<br>a few in herb.<br>Gray.                      | 42  | 4  | 0  | 42  |
| Alexander Agassiz.                     | S. S. <i>Albatross</i> (Ameri-<br>can).  | 28 Mar.-4 Apr.,<br>1891.     | Charles.<br>Chatham.<br>Duncan.<br>(Also James,<br>on which no<br>plants seem<br>to have been<br>collected.)  | Dr. J. N. Rose.  | Plants chiefly<br>at U. S. Nat.<br>Museum; some<br>duplicates in<br>herb. Gray. | 41  | 1  | 0  | 25  |
| Prof. Georg Baur. }<br>C. F. Adams. }  | Local sloops<br>Guayaquil.   | 9 June-6 Sept.,<br>1891.     | Albington.<br>Albemarle.<br>Barrington.<br>Bridloe.<br>Charles.<br>Chatham.<br>Duncan.<br>Gardner.<br>Hood.<br>Indefatigable.<br>James.<br>Jervis.<br>Tower.  | Phanerogams and<br>ferns by B. L. Rob-<br>inson and J. M.<br>Greenman; Echens<br>by Miss C. E. Cum-<br>mings.  | A nearly com-<br>plete set in<br>herb. Gray.                                    | 385 | 66 | 37 | 346 |
| R. E. Snodgrass. }<br>Edmund Heller. } | <i>Julia E. Whalen</i><br>(American). Hop-<br>kins Exped. from<br>Leland Stanford Jr.<br>Univ. | 10 Dec. 1898-<br>June, 1899. | Albington.<br>Albemarle.<br>Barrington.<br>Bridloe.<br>Charles.<br>Chatham.<br>Culpepper.<br>Duncan.<br>Gardner.<br>Hood.<br>Indefatigable.<br>James.<br>Narborough.<br>Seymour.<br>Tower.<br>Wenman. | Phanerogams and<br>ferns chiefly by B.<br>L. Robinson; thal-<br>lophytes and mosses<br>by W. G. Farlow;<br>hepatites by A. W.<br>Evans; Cactaceae<br>by K. Schumann. | A complete set<br>of vascular<br>plants in herb.<br>Gray.                       | 949 | 78 | 19 | 949 |





TABLE II.—continued.

|   | Galapagos Is. | Abington. | Albemarle. | Barrington. | Blindoe. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | James. | Jervis. | Narborough. | Seymour. | Tower. | Wenman. |
|---|---------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|--------|---------|-------------|----------|--------|---------|
| <i>Nephrodium villosum</i> . . . .                  |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Nephrolepis acuta</i> . . . .                    |               |           |            |             | +        |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>pectinata</i> . . . . .                          |               |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Nothochlaena sulphurea</i> . . . .               |               |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Pellaea geraniaefolia</i> . . . . .              |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Polypodium angustifolium</i> . . . .             |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>aureum</i> . . . . .                             |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>crassifolium</i> . . . . .                       |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>incanum</i> . . . . .                            |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>lanceolatum</i> . . . . .                        |               |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>lepidopteris</i> . . . . .                       |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>loriceum</i> . . . . .                           |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>palaceum</i> . . . . .                           |               |           | +          |             |          |          |          | +          |         |          |       |                |        |         |             |          |        |         |
| <i>pectinatum</i> . . . . .                         |               |           | +          |             |          |          |          | +          |         |          |       |                |        |         |             |          |        |         |
| <i>percussum</i> . . . . .                          |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Phyllitidis</i> . . . . .                        |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>pleiosorum</i> . . . . .                         |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>rude</i> . . . . .                               |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>squamatum</i> . . . . .                          |               |           | +          | +           |          | +        | +        | +          | +       |          |       |                |        |         |             | +        |        |         |
| <i>sp.</i> . . . . .                                |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Pteris aquilina</i> , var. <i>escu-</i>          |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>lenta</i> . . . . .                              |               |           | +          |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>incisa</i> . . . . .                             |               |           |            |             |          |          |          | +          |         |          |       |                |        |         |             |          |        |         |
| <i>pedata</i> . . . . .                             |               |           | +          |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>propinqua</i> , var. <i>Cuming-</i>              |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>iana</i> . . . . .                               |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Taenitis angustifolia</i> . . . . .              |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Azolla caroliniana</i> . . . . .                 |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Salvinia</i> sp. . . . .                         |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Lycopodium clavatum</i> . . . . .                |               |           |            |             |          |          |          | +          |         |          |       |                |        |         |             |          |        |         |
| <i>dichotomum</i> . . . . .                         |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>sp.</i> . . . . .                                |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>sp.</i> . . . . .                                |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Potamogeton pectinatus</i> . . . . .             |               |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Ruppia maritima</i> . . . . .                    |               |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Najas marina</i> , var. <i>latifolia</i> . . . . |               |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Antheophora elegans</i> . . . . .                |               |           |            |             | +        | +        |          |            |         |          |       |                | -      | +       |             |          |        |         |
| <i>Aristida divulsa</i> . . . . .                   |               | +         |            |             | +        |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>repens</i> . . . . .                             |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>subspicata</i> . . . . .                         |               |           | +          | +           | +        |          |          |            |         |          |       |                | +      | +       |             |          | +      |         |
| <i>villosa</i> . . . . .                            |               |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Bouteloua pilosa</i> . . . . .                   |               | +         | +          | +           |          |          |          |            |         |          |       |                | +      | +       |             |          | +      |         |
| <i>Cenchrus distichophyllus</i> . . . . .           |               |           | +          |             |          |          |          |            |         |          |       |                | +      | +       |             |          |        |         |
| <i>granularis</i> . . . . .                         |               |           | +          |             |          | +        | +        |            |         |          |       |                |        |         |             |          | +      |         |
| <i>platyacanthus</i> . . . . .                      |               | +         | +          | +           | +        | +        | +        |            |         | +        | +     | +              |        |         | +           |          |        |         |
| <i>sp.</i> . . . . .                                |               |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Chloris anisopoda</i> . . . . .                  |               |           |            |             |          | +        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>elegans</i> . . . . .                            |               |           |            |             |          | +        |          |            |         |          |       |                |        |         |             |          | +      |         |
| <i>radiata</i> . . . . .                            |               |           |            |             |          | +        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Chusquea</i> sp. . . . .                         |               | +         |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |



TABLE II.—continued.

|   | Galapagos Ids. | Abingdon. | Albemarle. | Barrington. | Blindos. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | James. | Jervis. | Narborough. | Seymour. | Tower. | Wenman. |
|---|----------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|--------|---------|-------------|----------|--------|---------|
| <i>Cyperus rubiginosus</i> . . . . .      |                |           |            |             |          |          | — +      |            |         |          |       |                |        |         |             |          |        |         |
| var. <i>cornutus</i> . . . . .            |                |           |            |             |          |          | + +      |            |         |          |       |                |        |         |             | +        |        |         |
| <i>strigosus</i> . . . . .                |                |           |            |             |          |          | — —      |            |         |          |       |                |        |         |             |          |        |         |
| <i>suranimensis</i> . . . . .             |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>tristachyus</i> . . . . .              |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>sp.</i> . . . . .                      |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             | +        |        |         |
| <i>sp.</i> . . . . .                      |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        | —       |
| <i>Dichronema leucocephala</i> . . . . .  |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Eleocharis fistulosa</i> . . . . .     |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |         |
| <i>mutata</i> . . . . .                   |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Fimbristylis capillaris</i> . . . . .  |                |           |            |             | +        |          |          |            |         |          |       |                |        |         |             | +        |        |         |
| <i>diphylla</i> . . . . .                 |                |           |            |             |          |          |          |            |         |          | +     |                |        |         |             |          |        |         |
| <i>Hemicarpha subsquarrosa</i> . . . . .  |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Kyllinga pumila</i> . . . . .          |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Scleria pratensis</i> . . . . .        |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Lemna sp.</i> . . . . .                |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Tillandsia insularis</i> . . . . .     |                |           |            |             |          |          |          |            | +       |          |       |                |        |         |             |          |        |         |
| <i>Commelina nudiflora</i> . . . . .      | —              |           | +          |             |          |          |          |            | +       |          |       |                |        |         |             |          |        |         |
| <i>Commelinaceae</i> ? . . . . .          |                |           |            |             |          |          | —        |            | +       |          |       |                |        |         |             |          |        |         |
| <i>Hypoxis decumbens</i> . . . . .        |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Epidendrum spicatum</i> . . . . .      |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Peperomia flagelliformis</i> . . . . . |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>galapagensis</i> . . . . .             |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>galtoides</i> . . . . .                |                | +         |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>petiolata</i> . . . . .                |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>ramulosa</i> . . . . .                 |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Snodgrassii</i> . . . . .              |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>n. sp.</i> . . . . .                   |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>sp.</i> . . . . .                      |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Fleurya aestuans</i> . . . . .         |                |           | +          |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>Parietaria debilis</i> . . . . .       |                |           |            |             |          |          | +        | +          |         |          |       |                |        |         | +           |          |        |         |
| <i>Pilea Baurii</i> . . . . .             |                |           |            |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>muscosa</i> . . . . .                  |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>peplodes</i> . . . . .                 |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Phoradendron floridanum</i> . . . . .  |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |         |
| <i>galapageium</i> . . . . .              |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Henslovii</i> . . . . .                |                | +         | +          |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>uncinatum</i> . . . . .                |                |           |            |             |          |          |          |            |         |          |       |                |        |         | +           |          |        |         |
| <i>Polygonum acuminatum</i> . . . . .     | —              |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>galapagense</i> . . . . .              |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Atriplex sp.</i> . . . . .             |                |           |            |             |          |          |          |            |         |          |       | +              |        |         |             | +        |        |         |
| <i>sp.</i> . . . . .                      |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        | +       |
| <i>Alternanthera radicata</i> . . . . .   |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>rigida</i> . . . . .                   |                |           |            |             |          |          |          |            |         |          | +     |                |        |         |             |          |        |         |
| <i>subscaposa</i> . . . . .               |                |           |            |             |          |          | —        |            |         |          |       |                |        | +       |             |          |        |         |
| <i>Amaranthus caracasanus</i> . . . . .   |                |           | +          |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>celosioides</i> . . . . .              |                |           |            |             |          |          | —        | —          |         |          |       |                |        |         |             |          |        |         |
| <i>sclerantoides</i> . . . . .            |                |           | +          |             |          |          | —        | —          |         |          |       |                |        |         | +           |          |        |         |
| <i>forma chathamensis</i> . . . . .       |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| " <i>hoodensis</i> . . . . .              |                |           |            |             |          |          |          |            |         |          | +     |                |        |         |             |          |        |         |

|                                   | Galapagos Ids. | Abingdon. | Albemarle. | Barrington. | Bindloe. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | James. | Jervis. | Narborough. | Seymour. | Tower. | Wenman. |
|-----------------------------------|----------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|--------|---------|-------------|----------|--------|---------|
| <i>Amaranthus spinosus</i>        |                |           |            |             |          | -        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>squarrosus</i>                 |                | +         |            |             |          | +        | +        |            |         |          |       | +              |        |         |             |          |        |         |
| <i>urceolatus</i>                 |                |           |            |             |          |          |          |            | +       |          |       |                |        |         |             |          |        |         |
| <i>viridis</i>                    |                |           | +          |             |          |          | +        |            |         |          |       | -              |        |         |             |          |        |         |
| <i>Froelichia juncea</i>          |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>lanigera</i>                   |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>nudicaulis</i>                 |                |           |            |             |          | +        | -        |            |         |          |       |                |        |         |             |          |        |         |
| <i>scoparia</i>                   |                |           |            |             |          |          |          |            |         |          |       |                |        |         | +           |          |        |         |
| <i>Iresine Edmondstonei</i>       |                |           |            |             |          | -        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Pleuropetalum Darwinii</i>     |                |           | +          |             |          | +        | +        |            |         |          |       |                | -      |         |             |          |        |         |
| <i>Telanthera echinocephala</i>   |                | +         | +          | +           |          | +        | +        |            | +       | +        | +     | +              | +      |         |             |          |        |         |
| <i>filifolia</i>                  |                |           |            |             |          | -        |          |            |         |          |       |                | -      |         |             |          |        |         |
| <i>flavicomis</i>                 |                | +         |            |             |          |          | -        |            |         | +        | +     |                |        |         |             |          |        |         |
| <i>frutescens</i>                 |                |           |            |             |          | -        | -        |            |         |          |       |                |        |         |             |          |        |         |
| <i>glaucescens</i>                |                |           |            |             |          | -        | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Helleri</i>                    |                |           |            |             |          |          |          | +          |         |          |       |                |        |         |             |          |        |         |
| <i>var. obtusior</i>              |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        | +       |
| <i>nudicaulis</i>                 |                |           | +          |             |          | +        | +        | +          |         |          |       |                | +      |         |             |          |        |         |
| <i>rugulosa</i>                   |                |           |            |             |          | +        | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Snodgrassii</i>                |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             | +        |        |         |
| <i>strictiuscula</i>              |                |           | +          |             |          |          | +        |            |         |          |       |                |        |         | +           |          |        |         |
| <i>vestita</i>                    |                |           |            |             |          |          |          |            |         |          |       | +              |        |         |             |          |        |         |
| <i>Batis maritima</i>             |                |           |            |             |          |          |          |            |         |          |       |                | +      |         |             |          |        |         |
| <i>Boussingaultia baselloides</i> |                |           |            |             |          | -        |          |            |         |          |       |                | +      |         |             |          |        |         |
| <i>Phytolacca decandra</i>        |                |           |            |             |          |          |          |            |         |          |       |                | -      |         |             |          |        |         |
| <i>Boerhaavia erecta</i>          |                |           |            |             |          |          | +        |            |         |          |       |                | -      |         |             |          |        |         |
| <i>paniculata</i>                 |                |           |            |             |          |          | +        | +          |         |          |       |                | -      |         |             |          |        |         |
| <i>scandens</i>                   |                |           |            |             |          |          | +        | +          |         |          |       |                | -      |         |             |          |        |         |
| <i>viscosa</i>                    |                |           | +          | +           | +        |          | +        | +          |         | +        |       | +              | +      |         |             | +        |        |         |
| <i>Cryptocarpus pyriformis</i>    |                |           | +          | +           | +        | +        | -        |            |         |          | +     |                | +      |         |             |          |        |         |
| <i>Pisonia floribunda</i>         |                |           | +          |             |          |          |          |            |         |          |       |                | +      |         |             |          |        |         |
| <i>Nyctaginacea?</i>              |                |           |            |             |          |          |          |            |         |          |       |                | -      |         |             |          | +      |         |
| <i>Mollugo flavescens</i>         |                |           | +          |             |          |          | +        | +          |         |          |       |                | +      |         |             |          |        |         |
| <i>var. floriana</i>              |                |           |            |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>gracillima</i>                 |                |           | +          |             |          |          |          |            |         | +        |       |                | +      |         |             |          |        |         |
| <i>Snodgrassii</i>                |                |           | +          |             |          |          |          |            |         |          |       |                |        |         | +           |          |        |         |
| <i>Sesuvium Edmondstonei</i>      |                |           |            | +           |          | -        |          |            |         | +        |       |                |        |         |             | +        | +      | +       |
| <i>Portulacastrum</i>             |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             | +        | +      | +       |
| <i>Trianthema Portulacastrum</i>  |                |           |            | +           |          | +        | -        |            | +       | +        | +     | -              |        |         |             | +        |        |         |
| <i>Portulaca oleracea</i>         |                |           | +          |             |          | +        | +        |            |         | +        | +     |                |        |         |             |          |        |         |
| <i>Portulaca sp.</i>              |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        | +       |
| <i>Drymaria cordata</i>           |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Cissampelos Pareira</i>        |                | +         | +          |             |          | +        | +        |            |         |          |       |                |        | -       |             |          |        |         |
| <i>Brassica campestris</i>        |                |           |            |             |          | +        | -        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Sinapisrum</i>                 |                |           |            |             |          | -        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Raphanus sativus</i>           |                |           |            |             |          | -        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Senebiera pinnatifida</i>      |                |           |            |             |          | -        |          |            |         |          |       |                |        | -       |             |          |        |         |
| <i>Sanguisorbea?</i>              |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Acacia farnesiana</i>          |                |           | -          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>macracantha</i>                |                |           |            |             |          | +        | -        |            |         |          |       | +              |        |         |             |          |        |         |

TABLE II. — continued.

|  | Galapagos Ids. | Abingdon. | Albemarle. | Barrington. | Bindloe. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | Jama. | Jervis. | Narborough. | Seymour. | Tower. | Wenman. |
|--|----------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|-------|---------|-------------|----------|--------|---------|
| <i>Acacia tortuosa</i> . . . . .               |                |           |            |             |          |          |          |            |         |          |       |                | +     |         |             |          |        |         |
| sp. . . . .                                    |                | +         |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| sp. . . . .                                    |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| sp. . . . .                                    |                |           |            |             |          |          |          |            |         |          |       |                | +     |         |             |          |        |         |
| <i>Astragalus Edmonstonei</i> . . . . .        |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Caesalpinia Bonducella</i> . . . . .        |                |           | +          |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>pulcherrima</i> . . . . .                   |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Canavalia obtusifolia</i> . . . . .         |                |           |            |             | +        |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Cassia hirsuta</i> . . . . .                |                |           |            |             |          | +        |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>occidentalis</i> . . . . .                  |                |           | +          |             |          | +        | +        |            |         |          |       |                |       |         |             |          |        |         |
| <i>picta</i> . . . . .                         |                |           | +          |             |          |          | +        |            |         |          |       |                |       |         |             |          |        |         |
| <i>sericea</i> . . . . .                       |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Crotalaria glabrescens</i> . . . . .        |                | +         |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>pumila</i> . . . . .                        |                | +         |            |             |          | +        | +        |            |         |          |       |                | +     |         | +           | +        |        |         |
| <i>setifera</i> . . . . .                      |                | +         |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Dalea parvifolia</i> . . . . .              |                |           |            |             |          | +        |          |            |         |          |       | +              | +     |         |             |          |        |         |
| <i>tenuicaulis</i> . . . . .                   |                |           | +          |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Desmanthus depressus</i> . . . . .          |                |           |            |             |          |          | +        | +          | +       |          |       |                |       |         |             |          |        |         |
| <i>Desmodium galapagense</i> . . . . .         |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>incanum</i> . . . . .                       |                |           |            |             |          |          | +        |            |         |          |       |                |       |         |             |          |        |         |
| <i>molle</i> . . . . .                         |                | +         | +          |             |          |          |          |            |         |          |       |                |       | +       |             |          |        |         |
| <i>spirale</i> . . . . .                       |                |           | +          |             | +        | +        |          |            | +       | +        | +     |                | +     |         |             | +        |        |         |
| <i>uncinatum</i> . . . . .                     |                |           |            |             |          |          | +        |            |         |          |       |                |       |         |             |          |        |         |
| <i>Erythrina velutina</i> . . . . .            |                |           |            |             |          |          |          |            |         |          |       |                | +     |         |             |          |        |         |
| <i>Galactea Jussiaeana</i> , var. <i>volu-</i> |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>bilis</i> . . . . .                         |                |           | +          |             |          |          | +        |            |         |          |       | +              |       |         | +           | +        |        |         |
| var. <i>glabrescens</i> . . . . .              |                |           |            |             |          |          | +        |            |         |          |       |                |       |         |             |          |        |         |
| n. sp. . . . .                                 |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Geoffraea superba</i> . . . . .             |                |           |            |             |          |          |          |            |         | +        |       |                |       |         |             |          |        |         |
| <i>Mimosa asperata</i> . . . . .               |                |           |            |             |          |          |          |            |         |          | +     |                |       |         |             |          |        |         |
| <i>Neptunia plena</i> . . . . .                |                |           |            |             |          | +        | +        |            |         | +        |       |                |       | +       |             | +        |        |         |
| <i>Parkinsonia aculeata</i> . . . . .          |                |           | +          |             |          | +        | +        |            | +       |          | +     |                |       |         |             | +        |        |         |
| <i>Phaseolus adenanthus</i> . . . . .          |                |           |            |             |          |          |          |            |         |          | +     |                |       |         |             |          |        |         |
| <i>mollis</i> . . . . .                        |                |           |            |             |          |          |          |            |         |          |       |                |       | +       |             |          |        |         |
| <i>semierectus</i> . . . . .                   |                |           |            |             |          | +        | +        |            |         |          |       |                |       |         |             |          |        |         |
| <i>Piscidia Erythrina</i> . . . . .            |                |           |            |             |          | +        | +        |            |         |          |       |                |       |         |             |          |        |         |
| <i>Prosopis dulcis</i> . . . . .               |                | +         |            |             |          | +        | +        | +          | +       | +        | +     | +              |       |         |             | +        |        |         |
| <i>Rhynchosia minima</i> . . . . .             |                | +         | +          | +           | +        | +        | +        |            |         |          |       | +              |       |         | +           |          |        |         |
| <i>reticulata</i> . . . . .                    |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| sp. . . . .                                    |                |           | +          |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| sp. . . . .                                    |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Stylosanthes scabra</i> . . . . .           |                | +         | +          |             | +        | +        |          |            |         |          |       | +              |       | +       |             |          |        |         |
| <i>Tephrosia cinerea</i> . . . . .             |                |           | +          | +           | +        | +        | +        |            |         |          |       | +              |       |         |             |          |        |         |
| <i>Vigna owahuensis</i> . . . . .              |                |           |            |             |          |          |          |            |         |          |       |                |       |         |             | +        |        |         |
| <i>Oxalis carnosa</i> . . . . .                |                |           |            |             |          |          |          | +          |         |          |       |                |       |         |             |          |        |         |
| <i>Cornelli</i> . . . . .                      |                |           | +          | +           |          | +        | +        | +          | +       | +        | +     | +              |       |         |             |          |        |         |
| <i>corniculata</i> . . . . .                   |                |           |            |             |          |          | +        |            |         |          |       |                |       |         |             |          |        |         |
| <i>Linum oligophyllum</i> . . . . .            |                |           | +          |             |          |          |          |            |         |          |       |                |       |         |             |          |        |         |
| <i>Kallstroemia adscendens</i> . . . . .       |                |           |            |             |          |          |          |            | +       | +        |       |                |       |         |             |          |        |         |
| <i>Tribulus cistoides</i> . . . . .            |                |           |            |             | +        |          |          |            |         |          | +     | +              |       |         |             | +        |        |         |





|   | Galapagos Ids. | Abington. | Albemarle. | Barrington. | Blindoe. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | Jamaica. | Jervis. | Narborough. | Seymour. | Tower. | Wenman. |
|---|----------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|----------|---------|-------------|----------|--------|---------|
| <i>Euphorbia nummularia</i> , var.        |                |           |            |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>glabra</i> . . . . .                   |                |           |            |             |          | +        |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>pilulifera</i> . . . . .               |                |           |            |             |          | +        | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>punctulata</i> . . . . .               |                |           |            |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>recurva</i> . . . . .                  |                |           |            |             |          |          | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>viminea</i> . . . . .                  |                |           | +          |             |          |          |          |            |         |          | +     |                |          |         |             |          |        |         |
| <i>forma barringtonensis</i> . . . . .    |                |           |            | +           | +        |          |          |            |         |          |       |                |          |         |             |          |        |         |
| " <i>carolinensis</i> . . . . .           |                |           |            |             |          | +        |          |            |         |          |       |                |          |         |             |          |        |         |
| " <i>castellana</i> . . . . .             |                |           |            |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>Euphorbia viminea</i> , <i>forma</i>   |                |           |            |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>chathamensis</i> . . . . .             |                |           |            |             |          |          | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>forma jacobensis</i> . . . . .         |                |           |            |             |          |          |          |            |         |          |       | +              |          |         |             |          |        |         |
| " <i>jervensis</i> . . . . .              |                |           |            |             |          |          |          |            |         |          |       |                | +        |         |             |          |        |         |
| var. <i>abingtonensis</i> . . . . .       |                | +         |            |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>sp.</i> . . . . .                      |                |           |            |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>sp.</i> . . . . .                      |                |           |            |             | +        |          | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>sp.</i> . . . . .                      |                |           |            |             |          | —        |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>Hippomane Mancinella</i> . . . . .     |                |           | +          |             |          |          | —        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Manihot utilisima</i> . . . . .        |                |           |            |             |          |          | —        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Phyllanthus carolinensis</i> . . . . . |                |           | +          |             |          | +        | —        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Ricinus communis</i> . . . . .         |                |           |            |             |          | —        | —        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Callitriche sp.</i> . . . . .          |                |           |            |             |          | +        | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Maytenus obovata</i> . . . . .         |                |           | +          | +           |          | +        | +        |            |         |          | +     |                | +        | +       |             | —        | +      |         |
| <i>Cardiospermum Corindum</i>             |                |           | +          |             |          | —        | +        |            |         |          |       |                | +        |         |             |          |        |         |
| <i>galapageium</i> . . . . .              |                |           | +          |             |          |          |          |            |         |          | +     |                |          |         |             |          |        |         |
| <i>Dodonaea viscosa</i> . . . . .         |                |           | +          |             |          |          |          |            |         |          |       | +              |          |         |             |          |        |         |
| var. <i>spathulata</i> . . . . .          |                |           | +          |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>Sapindus Saponaria</i> . . . . .       |                |           | +          |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>Discaria pauciflora</i> . . . . .      |                |           | +          | +           |          |          | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Cissus sicyoides</i> . . . . .         |                |           |            |             | —        | +        |          |            |         |          | +     | —              | —        |         |             | +        |        |         |
| <i>Vitis vinifera</i> . . . . .           |                |           |            |             |          | —        |          |            |         |          |       |                |          |         |             | —        |        |         |
| <i>Corchorus pilobulus</i> . . . . .      |                |           | +          |             |          |          |          |            |         | +        |       |                |          |         |             |          |        |         |
| <i>Triumfetta semitriloba</i> . . . . .   |                |           | +          |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>Abutilon Anderssonianum</i>            |                | +         |            | +           |          | —        | +        |            | +       | +        |       | +              |          |         |             |          | +      |         |
| <i>depauperatum</i> . . . . .             |                |           | +          | +           |          |          |          |            |         |          |       |                |          |         |             |          |        |         |
| <i>Anoda hastata</i> . . . . .            |                |           |            |             |          | +        | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Bastardia viscosa</i> . . . . .        |                |           | +          | +           |          | +        | +        |            |         |          |       |                |          |         |             |          |        |         |
| <i>Gossypium barbadense</i> . . . . .     |                | +         | +          | +           |          | +        | +        | —          | +       | +        |       |                | —        |         |             | +        |        |         |
| <i>Klotzschianum</i> . . . . .            |                |           | —          |             | +        |          | —        |            |         |          |       | +              |          |         |             |          |        |         |
|   |                |           |            |             |          |          |          |            |         |          |       |                |          |         |             |          |        |         |

TABLE II. — continued.

|   | Galapagos Ids. | Abingdon. | Albemarle. | Barrington. | Bindloe. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | James. | Jervis. | Narborough. | Seymour. | Tower. | Weeman. |
|---|----------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|--------|---------|-------------|----------|--------|---------|
| <i>Waltheria reticulata</i> . . . .     |                |           | +          |             |          | +        |          |            |         |          |       |                | +      |         |             |          |        |         |
| <i>forma acamata</i> . . . .            |                |           |            |             |          |          |          |            |         |          |       | +              |        |         |             |          |        |         |
| " <i>Anderssonii</i> . . . .            |                |           |            | +           |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| " <i>intermedia</i> . . . .             |                | +         |            |             | +        |          |          |            |         | +        |       |                |        |         |             |          | +      |         |
| <i>Turnera ulmifolia</i> . . . .        |                |           |            |             | +        | +        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Passiflora foetida</i> . . . .       |                |           |            |             | +        |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>lineariloba</i> . . . .              |                |           |            |             |          |          |          |            |         | +        | +     |                |        |         | +           |          |        |         |
| <i>puberula</i> . . . .                 |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Carica Papaya</i> . . . .            |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Mentzelia aspera</i> . . . .         |                |           | +          |             |          | +        | +        |            | +       | +        | +     |                | +      |         |             |          | +      |         |
| <i>Sclerothrix fasciculata</i> . . . .  |                |           | +          |             |          |          |          |            |         |          |       |                |        |         | +           |          |        |         |
| <i>Cereus galapagensis</i> . . . .      |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>nesioticus</i> . . . .               |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>sclerocarpus</i> . . . .             |                |           | +          |             | ?        |          | ?        |            |         |          |       |                | ?      |         | ?           |          |        |         |
| <i>Thouarsii</i> . . . .                |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Opuntia galapageia</i> . . . .       |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Helleri</i> . . . .                  |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>myriacantha</i> . . . .              |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        | +       |
| <i>sp.</i> . . . .                      | -              |           |            | -           |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Cuphea patula</i> . . . .            |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Rhizophora Mangle</i> . . . .        |                |           | -          |             |          |          |          |            |         |          |       |                |        |         | +           |          |        |         |
| <i>Psidium galapageium</i> . . . .      |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Conocarpus erectus</i> . . . .       |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Laguncularia racemosa</i> . . . .    |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Miconia Robinsoniana</i> . . . .     |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Myriophyllum sp.</i> . . . .         |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Apium laciniatum</i> . . . .         |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>leptophyllum</i> . . . .             |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Centella asiatica</i> . . . .        |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Hydrocotyle galapagensis</i> . . . . |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Petroselinum sativum</i> . . . .     |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Plumbago scandens</i> . . . .        |                |           | +          |             |          | +        | +        |            | +       |          |       |                |        |         |             |          |        |         |
| <i>Vallesia cymbaefolia</i> . . . .     |                |           | +          |             |          | +        | +        |            |         | +        |       |                |        |         |             |          |        |         |
| <i>pubescens</i> . . . .                |                |           |            |             |          | +        | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Asclepias angustissima</i> . . . .   |                | +         | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Vincetoxicum sp.</i> . . . .         |                |           |            |             |          | +        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Calystegia Soldanella</i> . . . .    |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Cuscuta acuta</i> . . . .            |                |           |            | +           |          |          |          |            |         |          |       |                |        |         | +           |          |        |         |
| <i>gymnocarpa</i> . . . .               |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Evolvulus glaber</i> . . . .         |                |           | +          |             |          |          |          | +          |         |          |       |                |        |         |             |          | +      |         |
| <i>simplex</i> . . . .                  |                |           |            |             |          | +        | +        |            |         |          |       | +              | +      |         |             |          |        |         |
| <i>Ipomoea biloba</i> . . . .           |                |           | +          |             |          | +        |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Bona-nox</i> . . . .                 |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>campanulata</i> . . . .              |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>galapagensis</i> . . . .             |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Habeliana</i> . . . .                |                |           |            |             | +        |          |          |            | +       | +        |       |                | +      |         |             | +        | +      | +       |
| <i>Kinbergi</i> . . . .                 |                | +         |            |             |          |          |          |            |         |          |       | +              |        | +       |             |          | +      | +       |
| <i>linearifolia</i> . . . .             |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Nil</i> . . . .                      |                |           |            |             |          | +        | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>pentaphylla</i> . . . .              | +              |           |            |             |          |          |          |            | +       | +        | +     | +              |        | +       |             | +        | +      |         |

TABLE II. — continued.

|   | Galapagos Ids. | Abingdon. | Albemarle. | Barrington. | Blindoo. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | James. | Jervis. | Narborough. | Seymour. | Tower. | Wenman. |
|---|----------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|--------|---------|-------------|----------|--------|---------|
| <i>Ipomoea tubiflora</i> . . . . .                              |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Coldenia Darwini</i> . . . . .                               |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>fusca</i> . . . . .  |                | +         | +          |             | +        |          | +        |            |         |          | +     | +              | +      |         |             | +        |        |         |
| <i>Cordia Andersoni</i> . . . . .                               |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>galapagensis</i> . . . . .                                   |                |           | +          |             |          |          |          |            | +       |          |       | +              |        |         |             | +        |        |         |
| <i>Hookeriana</i> . . . . .                                     |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             | +        |        |         |
| <i>leucophlyctis</i> . . . . .                                  |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             | +        |        |         |
| <i>lutea</i> . . . . .  |                | +         | +          | +           | +        | +        |          |            | +       | +        | +     |                | +      | +       |             | +        | +      |         |
| <i>revoluta</i> . . . . .                                       |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| var. <i>nigricans</i> . . . . .                                 |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Scouleri</i> . . . . .                                       |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>n. sp. ?</i> . . . . .                                       |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Heliotropium Andersonii</i> . . . . .                        |                |           |            |             |          |          |          |            |         |          |       | +              | +      |         |             |          |        |         |
| <i>curassavicum</i> . . . . .                                   |                |           |            |             | +        |          |          |            |         |          |       | +              | +      |         |             | +        |        |         |
| <i>indicum</i> . . . . .  |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>parviflorum</i> . . . . .                                    |                | +         | +          | +           |          |          | +        | +          | +       | +        |       |                | +      |         |             |          | +      |         |
| <i>Tournefortia hirsutissima</i> . . . . .                      |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>laurifolia</i> . . . . .                                     |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>psilostachya</i> . . . . .                                   |                |           | +          |             |          |          | +        |            |         |          | +     |                | +      |         |             |          |        |         |
| <i>pubescens</i> . . . . .                                      |                |           | +          |             |          |          | +        |            | +       |          |       | +              | +      |         |             |          |        |         |
| <i>rufo-sericea</i> . . . . .                                   |                |           | +          |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>strigosa</i> . . . . .                                       |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Avicennia officinalis</i> . . . . .                          |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Clerodendron molle</i> . . . . .                             |                |           | +          |             |          |          | +        |            |         |          |       |                |        |         |             | +        |        |         |
| <i>sp.</i> . . . . .  |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>sp.</i> . . . . .  |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Duranta Plumieri</i> . . . . .                               |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Lantana peduncularis</i> . . . . .                           |                | +         | +          | +           | +        |          |          |            | +       | +        | +     | +              | +      | +       | +           |          | +      |         |
| <i>Lippia canescens</i> . . . . .                               |                |           |            |             |          |          | +        |            |         |          | +     |                |        |         |             |          |        |         |
| <i>rosmarinifolia</i> . . . . .                                 |                |           | +          | +           |          |          |          |            | +       |          |       |                |        |         |             |          |        |         |
| <i>salicifolia</i> . . . . .                                    |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Stachytarpheta dichotoma</i> . . . . .                       |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>Verbena carolina</i> . . . . .                               |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>grisea</i> . . . . .   |                |           |            |             |          |          |          |            | +       |          |       |                |        |         |             |          |        |         |
| <i>litoralis</i> . . . . .                                      |                |           |            |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>officinalis</i> . . . . .                                    |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Hyptis capitata</i> . . . . .                                |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>subverticillata</i> . . . . .                                |                |           | +          |             |          |          |          |            |         |          |       | +              | +      | +       | +           |          |        |         |
| <i>Salvia occidentalis</i> . . . . .                            |                |           | +          |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>prostrata</i> . . . . .                                      |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>tiliaefolia</i> . . . . .                                    |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Teucrium inflatum</i> . . . . .                              |                |           |            |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>Acnistus ellipticus</i> . . . . .                            |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>insularis</i> . . . . .                                      |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Capsicum annuum</i> . . . . .                                |                |           |            |             |          |          | +        | +          |         |          |       |                |        |         |             |          |        |         |
| <i>Datura Tatula</i> . . . . .                                  |                |           |            |             |          |          | +        |            |         |          |       |                |        |         |             |          |        |         |
| <i>sp.</i> . . . . .  |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Lycium sp.</i> . . . . .                                     |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |         |
| <i>Lycopersicum esculentum</i> ,<br>var. <i>minor</i> . . . . . |                | +         | +          |             |          |          |          |            |         |          | +     |                |        |         |             | +        |        |         |





TABLE II. — *continued.*

|                                     | Galapagos Ids. | Abingdon. | Albemarle. | Barrington. | Bindloe. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | James. | Jervis. | Narborough. | Seymour. | Tower. | Wrennan. |
|-------------------------------------|----------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|--------|---------|-------------|----------|--------|----------|
| <i>Scalesia Darwinii</i> . . . . .  |                |           |            |             |          | +        |          |            |         |          |       |                |        |         |             |          |        |          |
| <i>decurrens</i> . . . . .          |                |           | —          |             |          | +        |          |            |         |          |       |                | —      |         |             |          |        |          |
| <i>divisa</i> . . . . .             |                |           |            | +           |          |          | +        |            |         |          |       |                |        |         |             |          |        |          |
| <i>gummifera</i> . . . . .          |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |          |
| <i>Helleri</i> . . . . .            |                |           |            |             | +        |          |          |            |         |          |       |                |        |         |             |          |        |          |
| <i>Hopkinsii</i> . . . . .          |                | +         |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        |          |
| <i>incisa</i> . . . . .             |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |          |
| <i>microcephala</i> . . . . .       |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             | +        |        |          |
| <i>narbonensis</i> . . . . .        |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             | +        |        |          |
| <i>ovata</i> . . . . .              |                |           |            |             |          | +        |          |            |         |          |       |                |        |         |             |          |        |          |
| <i>pedunculata</i> . . . . .        |                |           |            |             |          |          |          |            |         |          |       |                | —      |         |             |          |        |          |
| <i>retroflexa</i> . . . . .         |                |           |            |             |          |          |          |            |         |          |       | —              |        |         |             |          |        |          |
| <i>Snodgrassii</i> . . . . .        |                |           |            |             |          |          |          |            |         |          |       |                |        |         |             |          |        | +        |
| <i>n. sp.?</i> . . . . .            |                |           | +          |             |          |          |          |            |         |          |       |                |        |         |             |          |        |          |
| <i>Sonchus oleraceus</i> . . . . .  |                |           | +          |             |          | +        |          |            |         |          |       |                |        |         |             |          |        |          |
| <i>Spilanthes Acnella</i> . . . . . |                |           |            |             |          | —        |          |            |         |          |       |                |        |         | +           |          |        |          |
| <i>diffusa</i> . . . . .            |                |           |            |             |          | —        |          |            |         |          |       |                | —      |         |             |          |        |          |
| <i>Tagetes erecta</i> . . . . .     |                |           |            |             |          |          | —        |            |         |          |       |                |        |         |             |          |        |          |

## GENERAL FEATURES OF THE FLORA.

The habitual traits of the vegetation on the Galapagos Islands have been graphically although rather gloomily pictured by Darwin (2), 140, and by Wolf (1), 277. A. Agassiz (1), 57-62, and Baur, who visited the islands at a more favorable season, describe the flora as somewhat more luxuriant. The lower slopes of all the islands, however, are relatively sterile, arid, and rough, much of the surface being covered with irregular blocks of lava. The air, although not excessively hot, is very dry. Trade winds are said to be moderate in force, but almost constant. The perennial vegetation of these lower parts of the islands is predominatingly of a small-leaved xerophytic type, being composed of scattered and often sparse, stemmy shrubs and undershrubs, or wiry herbs and grasses, over which rise the bulky and grotesque trunks of arborescent species of *Cereus* and *Opuntia*. On those islands, which, like Gardner, Hood, Tower, and Bindloe, are entirely low, not attaining an altitude of 300 m., this is the only kind of perennial vegetation, except a few halophytes along the shores. On the higher islands, however, like Albemarle, Charles, Chatham, James, and Indefatigable, the upper parts



penetrate higher, moister strata of the air, and support a much more luxuriant vegetation of a mesophytic type. Between these chief types of vegetation there are perceptible but ill-defined belts of an intermediate nature. A few lakes and ponds, some muddy and others briny, support a littoral vegetation, chiefly of *Cyperaceae*, a family represented by seventeen species and varieties of *Cyperus* and one or two each of *Dichro-nema*, *Eleocharis*, *Fimbristylis*, *Hemicarpha*, *Kyllinga*, and *Scleria*. A cold spring on Charles Island contains an *Azolla* (Andersson), and in a small brook on the same island a *Salvinia*, a *Callitriche*, and a *Lemna* have been found (Wolf); but as both springs and streams are rare and small, such true hydrophytes are few and relatively unimportant in the archipelago. Halophytes are more abundant, and occur not only on the sandy beaches in the brackish marshes along the shore, but to some extent around the saline lakes of the interior portions of the islands. The chief halophytes are *Cissampelos Pareira*, *Tephrosia cinerea*, *Rhizophora Mangle*, *Laguncularia racemosa*, *Sesuvium Portulacastrum*, *S. Edmonstonei*, *Calystegia Soldanella*, *Ipomoea biloba*, *I. Habeliana*, *Batis maritima*, *Avicennia officinalis*, *Verbena litoralis*, *Heliotropium curassavicum*, *Scaevola Lobelia*, *Ruppia maritima*, *Najas marina*, var. *latifolia*, and probably *Thinogeton Miersii*, *T. Hookeri*, and two undetermined species of *Atriplex*.

The lower arid slopes support not only the stemmy, suffrutescent vegetation described above, but also are covered from time to time by an ephemeral growth of desert annuals, which spring up shortly after the rainy season begins, mature rapidly, and quickly dry up completely. Examples of this type of plants are found in *Porophyllum ellipticum*, *Evolvulus simplex*, and several species of *Boerhaavia*, *Kallstroemia*, *Tribulus*, and *Bidens*.

Trees, if we except the arborescent cacti, occur chiefly upon the upper parts of the islands and never attain great size. In many cases, however, the same species which form a tree-like growth in the upper region extend well into the lower or even to the shore as shrubs, stunted by the extreme drought and sterility of their environment. The trees and shrubs are in great part armed with spines or thorns, e.g. *Mimosa*, *Acacia*, *Parkinsonia*, *Discaria*, *Castela*, *Zanthoxylum*, *Cereus*, and *Opuntia*, — genera, all of which, it will be noticed, belong to the chori-petalous dicotyledons. On the other hand, species protected by poisonous juices or stinging hairs appear to be few. The climbing plants of the islands are chiefly of the genera *Boussingaultia*, *Cissampelos*, *Galactea*, *Rhynchosia*, *Cardiospermum*, *Ipomoea*, *Elaterium*, *Momordica*, and *Sicyos*.

They are neither so numerous nor conspicuous as in the tropical parts of continental America, and it may be noticed that the climbers of the Galapagos Islands are herbaceous, the true woody liana, so common in tropical jungles, being almost unknown upon these islands.

Epiphytes occur only at the higher altitudes and are neither abundant nor showy. Their ecological class is chiefly represented by one *Tillandsia*, one *Epidendrum*, and several *Peperomia*e. Of phanerogamic parasites there are four species of *Phoradendron* and two of *Cuscuta*.

The phanerogams of the Galapagos Islands have prevaillingly small and inconspicuous flowers, although exceptions are not infrequent. It is also worthy of remark that the flowers are in most cases regular and of a rather simple structure. Zygomorphic flowers are not numerous, and even in such genera as *Epidendrum*, *Salvia*, etc., where zygomorphy is universal, the Galapageian species show this trait only moderately developed. Similarly, flowers with other highly developed mechanisms for securing cross-pollination seem to be very rare in the islands. Fruits with hook apparatus or spines to aid their distribution by mammals are found in *Cenchrus*, *Tribulus*, *Acanthospermum*, *Bidens*, and *Lecocarpus*; but by the decided reduction in the spines of most of the species of *Cenchrus*, and in a variety of *Tribulus cistoides*, as well as in *Acanthospermum microcarpum*, it is easy to remark a tendency toward abortion in this apparatus, — a fact readily explained by the paucity of indigenous mammals. Of course the settlement of the islands has brought introduced mammals in considerable quantity, but it is too recent to have had a perceptible influence in this matter.

#### AFFINITIES OF THE FLORA.

The flora of the Galapagos Islands is almost wholly American in character. It contains, it is true, a very few plants which are not found in America. Thus a slight relationship to the flora of the Hawaiian Islands might be inferred from the genus *Lipochaeta*, of which one species is Galapageian and the others Hawaiian. There is also a report of a *Vigna* common to the Hawaiian Islands, the Galapagos, and Chili, — a matter which I have been unable to verify. *Ipomoea campanulata* of the East Indies and Malayan Archipelago occurs on the Galapagos Islands, but not to my knowledge upon the continent of America. This is probably a chance introduction. Several species of the Old World, such as *Vitis vinifera*, mentioned by Caruel (1), 623, *Brassica campestris*, *B. Sinapistrum*, and *Raphanus sativus*, are of course relics of cultivation or introduced weeds. *Eleocharis fistulosa*, ascribed by Caruel

(1), 622,\* to Chatham Island, is with scarcely a doubt an erroneous determination.

While it is thus clear that the Galapageian flora is only an outlying portion of the American flora with a strong specific differentiation, it is impossible to trace its relationship closely to any one section of the Pacific American vegetation. It can only be said in a general way that nearly all the plants of the archipelago are identical with, or obviously related to, species of the Sierras and Andes or of the Pacific Slope between Lower California on the one hand and northern Chili on the other. The xerophytic elements in the Galapageian flora show a considerable resemblance to the desert flora of southern Peru and the drier parts of the Andes. The mesophytes, on the other hand, correspond most nearly to plants of Ecuador, Colombia, Central America, and southern Mexico.

Those who have written upon the phytogeography of the Galapagos Islands have frequently mentioned the West Indian affinities of the flora, but here I can find no close resemblance or significant relationship. It is to be noticed that Hooker, who first employed the term "West Indian" regarding the flora of the Galapagos Islands, either used it to include, or expressly qualified it by the addition of, the flora of Panama and the adjacent lowlands of the continent, — a qualification which has not always been sufficiently regarded by subsequent authors. But, on the other hand, the discoveries of the last half century have shown a much greater difference between the flora of the Antilles and of the Panama region than was to be inferred when Hooker wrote; so although a definite relationship can be traced between the Galapageian flora and that of the lower slopes of Colombia, it does not follow that there is any marked affinity to the flora of the West Indian Islands. Indeed, of the species common to the Galapagos and the Antilles there are none (if we except a sterile and doubtfully identified specimen of the Cuban *Cenchrus distichophyllus*) which do not also occur upon the adjacent parts of the continent, and nearly all, like the halophytes of the shores, are species of wide tropical distribution.

Hooker (4), 239, 250, drew attention to what appeared to be an interesting double relationship between the plants of the Galapagos Islands and those of other regions, as follows: "Here, as in other countries, the vegetation is formed of two classes of plants, — the one peculiar to the group, the other identical with what are found elsewhere. In this there are even indications of the presence of two nearly equal Floras, — an indigenous and introduced, — and these are of a somewhat different stamp;

for the introduced species are for the most part the plants of the West Indian Islands and of the lower hot parts of the South American coast, whilst the peculiar Flora is chiefly made up of species not allied to the introduced, but to the vegetation which occurs in the Cordillera or the extra-tropical parts of America." But, after repeated efforts, I am unable to verify this double relationship, and must infer that subsequent discoveries, both upon the mainland and upon the islands, have done much to weaken the grounds upon which these conclusions once rested. Many cases could now be cited to show that the endemic plants of the Galapagos Islands, far from forming a marked or peculiar class, are often the nearest allies of species or varieties which are common to the islands and the continent. Both classes include alike the most widely diverse elements, — xerophytic, mesophytic, and halophytic types, annuals and perennials, herbs, shrubs, and trees, climbers and epiphytes, — and both occur in common at all altitudes and in every sort of habitat the islands afford. Accordingly it is not remarkable to find their closest congeners occupying the same diverse habitats upon the mainland from the hot, moist lowlands about Guayaquil and Panama to the cool parts of the Andes, dry regions of Peru or western Mexico, and in a few instances the more fertile uplands of Colombia, Central America, and Mexico. Moreover, the endemic forms show all grades of differentiation from their continental allies; some are well marked specific types, others mere varieties, while still others are scarcely distinguishable forms.

It appears, therefore, that very diverse floral elements have reached the archipelago, probably at different times and from widely different habitats. Presumably all have been subjected on the islands to influences of a kind to bring about change in their nature; and in two-fifths of the plants now known on the islands more or less pronounced evidences of such change can be observed. These plants, which show modification, form, as we have seen, no sharply marked class, but pass over very imperceptibly into nearly related forms which it is impossible to differentiate from plants of the mainland. That some plants have reached the Galapagos from the West Indian Islands during the subsidence of the Isthmus of Panama is by no means impossible, but as we should expect, these plants, if such there were, have established themselves in like manner upon the western coast and slopes of the continent, so that it is now quite impossible to trace any direct floral affinity between the West Indies and the Galapagos which the latter do not exhibit even in a higher degree with the western parts of the mainland.

Mr. Hemsley has already commented upon the wide divergence be-

tween the flora of the Galapagos group and that of Cocos Island. The latter is situated about three-sevenths of the way from the coast of Costa Rica to the Galapagos Archipelago. Until very recently the flora of Cocos Island has been scarcely known at all. Largely through the efforts of Professor H. Pittier and Messrs. Snodgrass & Heller, about eighty plants have now been secured on the island, and of these only the following eighteen are common to the flora of the Galapagos group:

|                                |                               |
|--------------------------------|-------------------------------|
| <i>Plagiochila Anderssonii</i> | <i>Paspalum conjugatum</i>    |
| <i>Acrostichum aureum</i>      | <i>Paspalum distichum</i>     |
| <i>Asplenium rhizophyllum</i>  | <i>Caesalpinia Bonducella</i> |
| <i>Nephrolepis acuta</i>       | <i>Euphorbia pilulifera</i>   |
| <i>Polypodium aureum</i>       | <i>Ricinus communis</i>       |
| <i>Polypodium lanceolatum</i>  | <i>Hibiscus tileaceus</i>     |
| <i>Polypodium Phyllitidis</i>  | <i>Ipomoea biloba</i>         |
| <i>Eleusine indica</i>         | <i>Ipomoea Bona-nox.</i>      |
| <i>Panicum sanguinale</i>      |                               |

It will be noticed that with the exception of the hepatic (*Plagiochila Anderssonii*) all of these species are weeds or plants of wide tropical distribution.

#### COMPOSITION OF THE FLORA.

As with most insular floras, the vegetation of the Galapagos Islands is striking rather by the absence of certain great groups than by the number and diversity of the genera and families represented. For instance, in the pteridophytes there is a total lack of arborescent forms on the one hand and of the filmy ferns (*Trichomanes*, *Hymenophyllum*, etc.) on the other. There are no gymnosperms; and among the monocotyledons there are no palms, aroids, rushes, or *Liliaceae*. Indeed, if we except the grasses and sedges (both well represented), the monocotyledons are shown only by some half-dozen scattered species. Among the dicotyledons the families best represented are the *Amarantaceae*, *Nyctaginaceae*, *Aizoaceae*, *Leguminosae* (about 10 per cent of the phanerogamic vegetation), *Euphorbiaceae* (about 12 per cent), *Malvaceae*, *Cactaceae*, *Convolvulaceae*, *Boraginaceae*, *Verbenaceae*, *Labiatae*, *Solanaceae*, *Rubiaceae*, and *Compositae* (about 13.5 per cent). Several great dicotyledonous families, widely distributed and abundant in the tropics of continental America, such as the *Sapindaceae*, *Myrtaceae*, *Melastomaceae*, *Lythraceae*, and *Onagraceae*, are scarcely or not at all represented in the

flora of the archipelago. Altogether there have been 72 families<sup>1</sup> of flowering plants and ferns found on the islands. Of these families 39 include endemic forms, and 33 contain only plants common to other regions. Excluding some indeterminate forms, there are 232 genera of pteridophytes and spermatophytes upon the islands.

Notwithstanding the uncertainty with which some plants are here reckoned as species, and others as varieties or forms, the following figures regarding the plants of the Galapagos Islands will have an interest :

|                 | Species. | Varieties. | Forms. | Indeterminate. | Total. |
|-----------------|----------|------------|--------|----------------|--------|
| Ferns           | 52       | 2          | 0      | 1              | 55     |
| Fern-allies     | 2        | 0          | 0      | 2              | 4      |
| Pteridophytes   | 54       | 2          | 0      | 3              | 59     |
| Spermatophytes  | 445      | 17         | 19     | 50             | 531    |
| Vascular plants | 499      | 19         | 19     | 53             | 590    |

Of endemic ferns there are only 3, that is, but 5 per cent. Of endemic spermatophytes there are 202 species, 15 varieties, and 19 forms,—a total of 236, that is, 44.4 per cent of the whole flowering flora. The total number of vascular plants which are endemic is 239, or 40.5 per cent. Of these endemic plants 130, that is, more than half, are confined to a single island.

The ratio of (determined) species to genera is as 2.16 : 1.

The ratio of species, varieties, and forms to genera is as 2.55 : 1.

It is noteworthy that, although there is such a high percentage of peculiar forms, varieties, and species, there is no corresponding peculiarity among the genera of these islands.<sup>2</sup> Of the several genera which have from time to time been characterized as exclusively Galapageian, only two, *Scalesia* and *Lecocarpus*, are now maintained, while all the others have been reduced to genera of continental America, with the single exception of *Macraea*, which falls into a genus of the Hawaiian Islands. Even *Scalesia* is not a strong genus, as it is not easy to show very sharp generic distinctions between it and some allied *Helianthoideae* in Mexico and Central America.

<sup>1</sup> This does not include the *Rosaceae* and *Bignoniaceae*, which rest, so far as their Galapageian occurrence is concerned, upon single and doubtful determinations.

<sup>2</sup> The statement of Darwin (2), 165, regarding the genera of *Compositae*, is, as pointed out by Mr. Hemsley, quite erroneous, and must have rested upon some misapprehension of data furnished him.



FAMILIES CONTAINING VASCULAR PLANTS PECULIAR TO THE ISLANDS.

| Family.                  | Endemic species. | Endemic varieties. | Endemic forms. | Total. | Family.                  | Endemic species. | Endemic varieties. | Endemic forms. | Total. |
|--------------------------|------------------|--------------------|----------------|--------|--------------------------|------------------|--------------------|----------------|--------|
| Filices . . . . .        | 3                | 0                  | 0              | 3      | Sapindaceae . . . . .    | 1                | 0                  | 0              | 1      |
| Gramineae . . . . .      | 13               | 1                  | 0              | 14     | Malvaceae . . . . .      | 3                | 0                  | 0              | 3      |
| Cyperaceae . . . . .     | 4                | 1                  | 0              | 5      | Sterculiaceae . . . . .  | 1                | 0                  | 3              | 4      |
| Bromeliaceae . . . . .   | 1                | 0                  | 0              | 1      | Passifloraceae . . . . . | 2                | 0                  | 0              | 2      |
| Orchidaceae . . . . .    | 1                | 0                  | 0              | 1      | Cactaceae . . . . .      | 7                | 0                  | 0              | 7      |
| Piperaceae . . . . .     | 5                | 0                  | 0              | 5      | Myrtaceae . . . . .      | 1                | 0                  | 0              | 1      |
| Urticaceae . . . . .     | 1                | 0                  | 0              | 1      | Melastomaceae . . . . .  | 1                | 0                  | 0              | 1      |
| Loranthaceae . . . . .   | 4                | 0                  | 0              | 4      | Umbelliferae . . . . .   | 1                | 0                  | 0              | 1      |
| Polygonaceae . . . . .   | 1                | 0                  | 0              | 1      | Apocynaceae . . . . .    | 1                | 0                  | 0              | 1      |
| Amarantaceae . . . . .   | 29               | 1                  | 2              | 32     | Asclepiadaceae . . . . . | 1                | 0                  | 0              | 1      |
| Nyctaginaceae . . . . .  | 1                | 0                  | 0              | 1      | Convolvulaceae . . . . . | 8                | 0                  | 0              | 8      |
| Aizoaceae . . . . .      | 4                | 1                  | 0              | 5      | Boraginaceae . . . . .   | 12               | 1                  | 0              | 13     |
| Leguminosae . . . . .    | 6                | 0                  | 0              | 6      | Verbenaceae . . . . .    | 4                | 0                  | 0              | 4      |
| Oxalidaceae . . . . .    | 1                | 0                  | 0              | 1      | Labiatae . . . . .       | 2                | 0                  | 0              | 2      |
| Zygophyllaceae . . . . . | 2                | 1                  | 0              | 3      | Solanaceae . . . . .     | 5                | 0                  | 0              | 5      |
| Simarubaceae . . . . .   | 1                | 0                  | 6              | 7      | Acanthaceae . . . . .    | 1                | 0                  | 0              | 1      |
| Burseraceae . . . . .    | 1                | 0                  | 0              | 1      | Rubiaceae . . . . .      | 16               | 0                  | 1              | 17     |
| Polygalaceae . . . . .   | 2                | 1                  | 0              | 3      | Cucurbitaceae . . . . .  | 2                | 0                  | 0              | 2      |
| Euphorbiaceae . . . . .  | 25               | 7                  | 7              | 39     | Compositae . . . . .     | 39               | 1                  | 0              | 40     |
| Celastraceae . . . . .   | 1                | 0                  | 0              | 1      |                          |                  |                    |                |        |

ABINGDON ISLAND.

Abingdon is, with the exception of the rather remote islets of Wenman and Culpepper, the most northern of the archipelago. It is about 14 km. long, and attains a height of 600 m. It was visited by Dr. Baur for a few hours, September 8th, 1891, and by Messrs. Snodgrass and Heller in June, 1899. Fifty flowering plants and ferns are known to occur on the island, and of these four are peculiar to it, namely: *Euphorbia viminea*, var. *abingdonensis*, *Borreria ovalis*, forma *abingdonensis*, *Justicia galapagana* (with close Mexican congener), and *Scalesia Hopkinsii*. The peculiar element is thus 8 per cent of the flora. *Peperomia galioides* of Mexico and tropical South America occurs upon Abingdon, but upon no other of the Galapagos Islands. The remaining plants are common to other islands of the group, and represent in all 22 families, of which the *Filices*, *Gramineae*, *Rubiaceae*, *Euphorbiaceae*, and *Compositae* have the greatest number of species. Although Abingdon lies, as we have seen, to the northward of the main archipelago and on the side toward Wenman and Culpepper, it has, so far as we yet know, only one plant in common with the former and none with the latter. A little over half

the flora of Abingdon is exclusively Galapageian, and the common element is greatest with Charles, Albemarle, and Chatham Islands.

#### ALBEMARLE ISLAND.

Albemarle is the largest island of the archipelago, and extends through about one and a quarter degrees of latitude. It is L-shaped and crossed by the equator near its northern extremity. There are many craters upon it, some of them having been active within historic times. The five largest range from 770 to 1570 m. in height. The island seems to have been explored chiefly if not exclusively along its western shore, the greater part of the plants collected upon it having been secured about Iguana Cove, Point Christopher, Elizabeth Bay, Tagus Cove, Banks Cove, and Black Bight. The island was first visited for botanical purposes by Macrae (whose name is also written McRae), a Scotch gardener, sent by the London Horticultural Society, on the voyage of the "Blonde," when in 1825 that vessel, under the command of the seventh Lord Byron, conveyed back from England the king and queen of the Sandwich Islands. Macrae remained eight days upon the island, and collected there 41 different kinds of plants. Albemarle has since been visited for botanical purposes by Darwin, Andersson, the Hassler Expedition, Wolf, Lee, Baur, Snodgrass and Heller. The broad southern portion of the island is relatively well watered and possesses a rich and copious vegetation, while the northern parts are described by Darwin as miserably sterile—an account to a great extent confirmed even by those who have visited the island at a more favorable season. In all 205 flowering plants and ferns have been found on Albemarle, and of these, 17 are to our present knowledge confined to this island. Thus the peculiar element (about 8 per cent) is less than that of any of the other large islands. Among the noteworthy plants of Albemarle are a well marked and apparently abundant *Scalesia* (*S. gummifera*) confined to the island, and the problematic *Pleuropetalum Darwinii*, which elsewhere occurs only upon James Island, although close congeners are found in Ecuador and Costa Rica. The different plant families occurring on Albemarle are represented in about the proportion in which they occur in the whole archipelago. Of the species of Albemarle nearly half are common to Charles and Chatham, and about one-third to James, while scarcely more than one-fifth have been found on Indefatigable, although it attains about the same height and lies directly between Albemarle and Chatham.

## BARRINGTON ISLAND.

Barrington is a small island about 8 km. long, lying between Indefatigable and Chatham. It rises only 277 m. above sea-level, and possesses only a xerophytic type of vegetation, with no ferns, no sedges, no *Piperaceae*, and only two *Leguminosae*. The island has been visited by Dr. Baur and by Messrs. Snodgrass and Heller, but only 39 plants have been secured there. Of these but one *Scalesia* is confined to the island. The thorny *Discaria*, the *Scalesia*, just mentioned, *Croton Scouleri*, *Cordia lutea*, *C. Hookeriana*, and *Maytenus obovata*, together with a large and abundant *Opuntia*, are its shrubby and arborescent species, the other plants being herbs of a decidedly xerophytic type, grasses and *Euphorbiaceae* predominating as to number. Of its 40 species, 26 occur upon Charles and Chatham Islands, while but 18 have been found on the nearer Indefatigable. *Leptochloa mucronata* of South America, collected on Barrington, is not known to occur on any of the other islands of the archipelago.

## BINDLOE ISLAND.

Bindloe lies with Abingdon and Tower to the northward of the other chief islands. It is roughly elliptical and about 15 km. long, rising to a height of only 250 m. It appears to have been visited for botanical purposes only by Dr. Baur, 4-5 September, 1891, and Messrs. Snodgrass and Heller, 29 June, 1899. Only 42 different plants have been collected or recorded there, and only 1, a mere leaf form of *Castela galapageia*, is peculiar to the island, although the continental *Canavallia obtusifolia*, found upon Bindloe, has as yet been collected upon none of the other islands. Messrs. Snodgrass and Heller report a gigantic *Cereus* as rare on Bindloe; only one individual was seen. The *Opuntia* of Bindloe is low, only 3 to 9 dm. in height. More than half the plants of Bindloe occur upon Charles, Chatham, and Albemarle respectively, while the proportion found on Abingdon and Tower is considerably less, and but a single plant of Bindloe has been found on Culpepper and Wenman.

## BRATTLE ISLAND.

Brattle is a small islet close to the southeastern shore of Albemarle. It forms, according to Dr. Baur, the remains of a single volcano, the southeast part of which has been nearly destroyed. The island has never been botanically explored. Dr. Baur made repeated efforts to land upon it, but was baffled by the precipitous shores. From his

account (2), 236, we learn that the island is green as though covered with vegetation, that many ravines run down from the upper part, and that it is the breeding place for numerous sea-birds. Messrs. Snodgrass and Heller sailed within a few hundred yards of Brattle and report it a low, steep, and sterile rim of a tufa crater, the only vegetation being a scattering growth of *Oroton* bushes.

Grossman Islands are similar small rocky islets, on which no plants have been observed.

#### CHARLES OR FLORIANA ISLAND.

Charles is one of the five larger and higher islands, and with the possible exception of Chatham has been the most fully explored botanically. It has yielded the largest number of plants, namely, 267. Of these 33 are peculiar to it, and 105 to the archipelago. Charles was at one time inhabited by a penal colony from Ecuador, and in its flora shows a greater number of obviously introduced plants than are found on any of the other islands except Chatham. Of the 267 plants found on Charles 126 occur also on Chatham and 100 on Albemarle. According to Baur (2), 239, the appearance of Charles is quite different from that of Chatham, the hills being more rounded. He also states that there are no large forest trees on Charles. The desolate coast of Charles at Black Beach is figured by Agassiz (1), t. 19, 20, and the copious vegetation on the way to the hacienda, t. 21.

#### CHATHAM ISLAND.

Chatham being the most easterly of the islands, is of course the nearest to the mainland. It is relatively large and fertile, and the only one of the group which is now inhabited. Portions of it are covered by forests of large trees, and in other parts are high arable plains, well shown by Agassiz (1), t. 17. When Baur visited the island in 1891, he found two hundred and ten acres under cultivation. The plantations are owned by Mr. Cobos, to whose courtesy and hospitality the visiting naturalists have been repeatedly indebted. Chatham has been relatively well explored, 231 plants having been found upon it. Of these, 24 are peculiar to it, and 82 exclusively Galapageian. Notwithstanding the habitual differences spoken of by Baur (2), 230, the flora of Chatham possesses the largest common element with that of Charles. A giant cactus (*Cereus sclerocarpus*?) with red egg-shaped fruit is mentioned by Baur. This is doubtless the one which appears in Agassiz's Plate 16.

## CULPEPPER ISLAND.

Culpepper is a small barren islet, the most northern member of the archipelago. It is remote from all the other islands except the similar islet, Wenman. Culpepper rises precipitously from the sea, and attains an altitude of only 169 m. It has been visited for botanical purposes only by Messrs. Snodgrass and Heller, on December 10th, 1898. They report that the main part of the island is inaccessible. It is a gently rounded plateau falling off abruptly on all sides. Observed from below, it was seen to be covered with a fairly dense growth of vegetation, including *Croton* bushes and *Opuntia* thickets. Only 4 plants were secured, and these were gathered on a short strip of talus at the base of the cliffs, on the leeward side of the island. They were *Telanthera Helli* (the most abundant species seen), a sterile and indeterminate *Tribulus*, *Croton Scouleri*, var. *brevifolius*, and *Thinogeton Miersii*. With the probable exception of the *Tribulus*, all these are confined to the Galapagos Islands, and the *Telanthera* is a marked new species, which in its typical form has been found only upon Culpepper, although a form of the same plant was also collected on Wenman.

## DUNCAN ISLAND.

Duncan is a small low circular island, between Indefatigable and Albe-  
marle. Plants have been collected upon it by Mr. Alexander Agassiz  
early in April, 1891; Dr. Baur, 2 August, 1891; and Messrs. Snodgrass  
and Heller, 5 May, 1899. Altogether 51 different species have been  
secured upon the island; of these, 5 are peculiar to it, namely: *Castela*  
*galapageia*, forma *duncanensis*, *Verbena grisea*, *Borreria galapageia*,  
*Scalesia Baurii*, and its var. *glabrata*. About half the flora of Dun-  
can is exclusively Galapageian. The *Opuntia* on this island is said to be  
scattered and of large size, growing upon the rim of the crater. *Rhizo-*  
*phora Mangle* occurs in a small swamp upon the west coast. It is another  
of the unaccountable anomalies in the florulae of these islands that the  
common element between Duncan and Charles or Chatham is greater  
than between Duncan and the nearer islands of Albemarle, Indefatigable,  
and James.

## GARDNER ISLAND.

Gardner is a very small steep-shored island about 1 km. in length, and  
only 8 km. east of Charles Island. It attains an altitude of 240 m. It  
was visited by Dr. Baur in July, 1891, and by Messrs. Snodgrass and

Heller in May, 1899. Thirty-three plants have been found on it, including 4 grasses, 3 *Euphorbiaceae*, and 3 *Malvaceae*, but no ferns, no *Rubiaceae*, and no *Compositae*. Gardner is the only one of the Galapagos Islands which on botanical exploration has yielded no peculiar plant. Baur (2), 233, speaks of the flora of Gardner as being the same as that of Hood, and doubtless there is great habital similarity, but of the 33 plants known to grow on Gardner, only 22 have been found on Hood, while no less than 31 have been observed on Charles.

#### HOOD ISLAND.

Hood is a desert island of elliptical form, lying to the southeast of the other islands. It is nearest Chatham, Barrington, Gardner, and Charles. According to Dr. Baur, it is a low tableland with few peaks, the highest only 200 m. in altitude, and thus still wholly within the lower dry strata of the atmosphere. There are no trees of size on Hood, and the ground is strewn with large angular masses of rock. Dr. Baur states that cacti are here less abundant than on the other islands, and that the *Opuntia* is short and thick-stemmed. Hood Island has also been visited for botanical purposes by Dr. Habel, Professor Lee, and by Messrs. Snodgrass and Heller. Altogether 55 different plants are known to occur on the island; of these only two are peculiar to it, namely: *Amaranthus sclerantoides*, forma *hoodensis*, a mere leaf form, and *Acanthospermum lecocarpoides*, a well marked species. Of the plants of Hood, 20, or about 36 per cent, are peculiar Galapageian forms. There are no ferns, 8 grasses, 7 *Leguminosae* (including the Brazilian *Geoffraea superba*, not collected elsewhere in the Galapagos), 5 *Convolvulaceae*, 5 *Boraginaceae*, and 6 *Compositae*. There are no *Rubiaceae* and only 3 *Euphorbiaceae*. About three-fourths of the plants of Hood are also found on the lower arid slopes of Charles and Chatham Islands, while only about one-third of them have been observed on Indefatigable.

#### INDEFATIGABLE ISLAND.

Indefatigable is one of the larger islands, and is centrally situated in the archipelago. It is broadly elliptical, some 32 km. in diameter, and formed of a single, rather symmetrical volcanic mountain, rising to a considerable height. In the basin of the cone is a large area of well-watered land, which, according to Captain Tanner, possesses considerable natural resources. Indefatigable was first explored botanically by Andersson, who could, however, spend only a few hours upon it. It has



been subsequently visited by Dr. Habel, the Hassler Expedition, Dr. Wolf, Dr. Baur, 11 to 13 July, 1891, and Messrs. Snodgrass and Heller. Altogether 76 flowering plants have been found on the island. Of these, 8 are *Compositae*, 7 *Boraginaceae*, 7 grasses, and 5 *Amarantaceae*. Nine species and one form are peculiar to the island. Among these are two species of *Scalesia*, and two of *Borreria*. The vegetation so far as yet shown is of a more xerophytic cast than that of the other large islands, although it is to be suspected that this is due to imperfect exploration. Perhaps the most striking feature is the entire absence of ferns. The genus *Croton*, also, although one of the commonest and most widely distributed in the Galapagos, has not been collected or reported upon Indefatigable. Of the 76 plants known to occur on this island, 51 have been found on Chatham; 48 on Charles, and 46 on Albemarle.

#### JAMES ISLAND.

James is also one of the larger, higher, and more central islands. It has been visited by most of the expeditions which have explored the archipelago, and 153 plants have been collected upon it. Of these 19 are peculiar to the island, and 56 to the archipelago. The most noteworthy feature is the relative abundance of ferns, which here amount to 13 per cent of the whole vascular vegetation, — a striking contrast to their entire absence on the adjacent Indefatigable. The nearest affinities of the flora of James are with Charles, Albemarle, and Chatham.

#### JERVIS ISLAND.

Jervis Island is less than 3 km. long and of low altitude. It is but 9.6 km. south of James, and together with Duncan lies in a small portion of the ocean to a considerable extent inclosed by James, Albemarle, and Indefatigable islands. It was visited by the "Hassler," but so far as I can learn, only Dr. Baur has collected plants upon this island. He secured 22 different kinds, of which 2, *Euphorbia viminea*, forma *jervensis*, and *Castela galapageia*, forma *jervensis*, are foliar forms of species which in slightly different forms are rather widely distributed on the islands. It is a curious fact that of the 22 plants observed on this island only 9 have been found on the adjacent James Island, although 12 have been collected upon Chatham, and no less than 15 on Charles, both much more distant. Fourteen, or about two-thirds, of the plants of Jervis are confined to the Galapagos Archipelago.

## NARBOROUGH ISLAND.

In proportion to its size and interest Narborough has received the least botanical attention of any of the islands. This is to be regretted, as it is not only the most remote from the mainland, but is much shielded by the neighboring long and lunate island Albemarle from any direct drift from the other islands or from the continental coast. Although it is to be expected that Narborough would on this account possess a decidedly peculiar flora, the single collection made there by Messrs. Snodgrass and Heller and including 59 different plants, contains only 4 species confined to the island and only 26 which are confined to the archipelago. Thus the percentage of peculiar and strictly Galapageian plants is less rather than more than on the other large islands. This lack of peculiarity may well be due to recent volcanic activity on Narborough, since this would tend to impoverish the flora except as it was replaced by recent immigration from the other islands.

## THE SEYMOUR ISLANDS.

North and South Seymour are two islets lying just north of Indefatigable, from which they are separated by channels only 1 or 2 km. broad. They are of relatively low altitude. South Seymour is somewhat larger than North Seymour and lies directly between it and Indefatigable. The Seymour Islands have been visited for botanical purposes only by Messrs. Snodgrass and Heller, who collected upon the north island 18 plants and on the south 34. As upon the adjacent Indefatigable no ferns have been found on the Seymour Islands. On South Seymour there are 2 endemic species not known to occur upon the other islands, namely, *Bursera malacophylla* and *Euphorbia nesiotica*, while North Seymour has an as yet indeterminate plant (*Nyctaginacea*?) which may well prove peculiar to it. It is noteworthy that less than half the plants of the Seymour Islands have as yet been found upon Indefatigable, near as it is; indeed the common element is considerably greater with the much more distant islands of Charles, Chatham, and Albemarle. Halophytes form a noteworthy part of the vegetation of the Seymour Islands.

## TOWER ISLAND.

Tower is a small triangular island some 3 km. in breadth. It lies at the northeast of the main archipelago and is nearest Bindloe, which is

about 50 km. away. Tower rises only 65 m. above sea level. It has been visited by Dr. Baur, 2 September, 1891, and by Messrs. Snodgrass and Heller, June, 1899, who have together secured only 19 different kinds of plants upon it. Of these, 5 are *Euphorbiaceae*, and 3, *Convolvulaceae*. There are no ferns, and what is more remarkable, no *Amarantaceae*, *Leguminosae*, *Rubiaceae*, or *Compositae*, all of which are families exceptionally well represented upon most of the other islands. The only plant peculiar to the island is *Euphorbia viminea*, forma *castellana*, merely a well marked leaf-form of this polymorphous species. It is worthy of note, however, that in the size, shape, and thickness of its leaves, this form on Tower represents the opposite extreme from the variety of the same species found on the adjacent island of Abingdon. Eleven of the 19 plants observed on Tower are confined to the Galapagos Islands.

#### WENMAN ISLAND.

Wenman is a rocky islet, which, like Culpepper (43 km. distant), lies considerably to the northward of the other islands. For botanical purposes it has been visited only by Messrs. Snodgrass and Heller, who remained there from the 12th to the 18th of December, 1898. Mr. Heller's field notes, so far as they relate to plants, are as follows: "The main part of the island is largely inaccessible, but, like Culpepper, covered with a fair growth of vegetation. Through a glass the larger plants appeared to be *Croton*, *Opuntia*, and on the north side a cluster of leafless trees, each about a foot in diameter and twenty to thirty feet high, with a smooth brownish bark. In an inaccessible cave a *Polypodium* was seen. Our collecting was confined chiefly to a low detached islet north of the main island. Its vegetation consisted of a low *Opuntia* [*Helleri*], which grew in thick beds near the edges of the cliffs. Many of these were covered with greenish-yellow flowers and others with dry and prickly fruit. The central part of the islet was covered by a heavy growth of *Croton* [*Scouleri*, var. *brevifolius*] bushes. These were largely leafless, although a few were in flower. In habit they resembled saplings, with straight trunks ten feet high and an inch or two thick. An *Ipomoea* [*Kinbergi*] was common, twining among the *Croton* bushes. This had large white flowers. A *Telanthera* [*Helleri*, var. *obtusior*] was also common about the cliffs and near the *Opuntia* thickets. Dried stalks of a *Cyperus* were noted. On a talus slope of the main island the following species were collected: *Scalesia* [*Snodgrassii*], bushes two or

three feet high, with a thick head of leaves and flowers; *Cardiospermum* [*Corindum*] a few vines, also an *Atriplex* [undetermined] fairly common." Altogether eleven species were collected on Wenman and the detached islet. Of these three are new and peculiar, three Galapageian occurring also upon other members of the group, two common to the mainland, and three not fully determined.

TABLE III. — SUMMARY OF FLORULÆ.

(Relating exclusively to the Pteridophytes and Spermatophytes.)

| Island.          | Species, varieties, and forms on island. | Peculiar to island. | Per cent peculiar to island. | Peculiar to archipelago. | Per cent peculiar to archipelago. | Common to other regions. | Per cent common to other regions. |
|------------------|--|---------------------|------------------------------|--------------------------|-----------------------------------|--------------------------|-----------------------------------|
| Abingdon . .     | 50                                       | 4                   | 8                            | 26                       | 52                                | 24                       | 48                                |
| Albemarle . .    | 205                                      | 17                  | 8                            | 84                       | 41                                | 120                      | 59                                |
| Barrington . .   | 40                                       | 1                   | 2.5                          | 19                       | 48                                | 21                       | 52                                |
| Bindloe . . . .  | 42                                       | 1                   | 2.4                          | 19                       | 45                                | 23                       | 55                                |
| Charles . . . .  | 267                                      | 33                  | 12                           | 105                      | 39                                | 162                      | 61                                |
| Chatham . . .    | 231                                      | 24                  | 10                           | 82                       | 42                                | 149                      | 58                                |
| Culpepper . .    | 5  | 1                   | 20                           | 3                        | 60                                | 2                        | 40                                |
| Duncan . . . .   | 51                                       | 5                   | 10                           | 25                       | 49                                | 26                       | 51                                |
| Gardner . . .    | 33                                       | 0                   | 0                            | 15                       | 45                                | 19                       | 55                                |
| Hood . . . . .   | 59                                       | 2                   | 3.4                          | 20                       | 34                                | 35                       | 66                                |
| Indefatigable.   | 76                                       | 10                  | 13                           | 35                       | 47                                | 41                       | 53                                |
| James . . . . .  | 153                                      | 19                  | 12                           | 56                       | 37                                | 97                       | 63                                |
| Jervis . . . . . | 22                                       | 2                   | 9                            | 16                       | 73                                | 6                        | 27                                |
| Narborough .     | 59                                       | 4                   | 7                            | 26                       | 44                                | 33                       | 56                                |
| Seymour . . .    | 47                                       | 2                   | 4                            | 16                       | 34                                | 29                       | 66                                |
| Tower . . . .    | 19                                       | 1                   | 5                            | 11                       | 58                                | 9                        | 42                                |
| Wenman . . .     | 11                                       | 2                   | 18                           | 5                        | 45                                | 6                        | 55                                |

TABLE IV.—PTERIDOPHYTES AND SPERMATOPHYTES COMMON TO THE DIFFERENT ISLANDS.

| Island.          | Abingdon. | Albemarle. | Barrington. | Bindloe. | Charles. | Chatham. | Culpepper. | Duncan. | Gardner. | Hood. | Indefatigable. | James. | Jervis. | Narborough. | Seymour. | Tower. | Wenman. |
|------------------|-----------|------------|-------------|----------|----------|----------|------------|---------|----------|-------|----------------|--------|---------|-------------|----------|--------|---------|
| Abingdon ..      | 50        | 34         | 11          | 15       | 36       | 31       | 0          | 10      | 13       | 14    | 18             | 26     | 9       | 14          | 7        | 11     | 1       |
| Albemarle ..     | ..        | 205        | 23          | 24       | 100      | 93       | 2          | 29      | 17       | 33    | 46             | 74     | 13      | 42          | 25       | 7      | 2       |
| Barrington ..    | ..        | ..         | 40          | 11       | 26       | 26       | 2          | 13      | 14       | 20    | 18             | 19     | 5       | 15          | 16       | 10     | 0       |
| Bindloe . . .    | ..        | ..         | ..          | 42       | 25       | 22       | 1          | 7       | 8        | 13    | 15             | 14     | 5       | 15          | 8        | 9      | 1       |
| Charles . . .    | ..        | ..         | ..          | ..       | 267      | 126      | 2          | 35      | 31       | 40    | 48             | 78     | 19      | 38          | 30       | 13     | 2       |
| Chatham . . .    | ..        | ..         | ..          | ..       | ..       | 281      | 2          | 34      | 22       | 42    | 51             | 64     | 12      | 33          | 31       | 15     | 4       |
| Culpepper . .    | ..        | ..         | ..          | ..       | ..       | ..       | 5          | 2       | 1        | 2     | 0              | 0      | 0       | 2           | 2        | 1      | 1       |
| Duncan . . .     | ..        | ..         | ..          | ..       | ..       | ..       | ..         | 51      | 17       | 26    | 20             | 21     | 8       | 9           | 16       | 7      | 1       |
| Gardner . . .    | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | 33       | 22    | 17             | 15     | 6       | 7           | 13       | 9      | 1       |
| Hood . . . . .   | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | 59    | 20             | 29     | 8       | 15          | 20       | 10     | 0       |
| Indefatigable    | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | ..    | 76             | 33     | 12      | 14          | 23       | 9      | 2       |
| James . . . . .  | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | ..    | ..             | 153    | 10      | 27          | 19       | 10     | 1       |
| Jervis . . . . . | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | ..    | ..             | ..     | 22      | 1           | 7        | 3      | 1       |
| Narborough .     | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | ..    | ..             | ..     | ..      | 59          | 8        | 7      | 0       |
| Seymour . . .    | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | ..    | ..             | ..     | ..      | ..          | 47       | 6      | 2       |
| Tower . . . .    | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | ..    | ..             | ..     | ..      | ..          | ..       | 19     | 2       |
| Wenman . . .     | ..        | ..         | ..          | ..       | ..       | ..       | ..         | ..      | ..       | ..    | ..             | ..     | ..      | ..          | ..       | ..     | 11      |

## BOTANICAL EVIDENCE REGARDING THE ORIGIN OF THE GALAPAGOS ISLANDS.

Two views have been advanced regarding the origin of the Galapagos Islands. According to the first they are pelagic islands, built up from the sea-floor by volcanic action, while according to the second view they are continental islands, tops of mountains, formerly a part of the mainland, now separated from it by subsidence. The first view, namely, that the Galapagos are islands of elevation, was held until about 1890 with scarcely

any question. It is strongly supported by the following facts: (1) All parts of the islands now visible are obviously of volcanic origin. (2) The islands are separated from the mainland by a very considerable depth of ocean (more than 1500 fathoms). (3) The western coast of South America shows no signs of subsidence, but rather of marked elevation in recent geologic time.

In accordance with this theory of emergence, the flora of the Galapagos Islands is assumed to have been brought to them by the ordinary agents of plant-distribution, namely, the wind, oceanic currents, and migratory birds. Moreover, it is not difficult to see the probable efficiency of these means of seed-transportation in the present case. The islands lie in the course of pretty constant trade winds, doubtless capable of bearing spores and small seeds to a great distance, as winds have been known to carry fine particles of sand and pumice for hundreds of miles. The great ocean current which sweeps along the west coast of Mexico, and the Humboldt Current, which runs northward along the coast of Chili and Peru, both turn westward just in the equatorial belt where the islands lie. That the current between Central America and the Galapagos has considerable seed-carrying power, seems more than probable from the interesting observations of Mr. Alexander Agassiz (1), 59, 69, who while dredging that part of the Pacific found the bottom "strewn thickly with vegetable matter, which came up in great masses in almost every haul of the trawl." He states also that: "The velocity of the currents in the Panama district is very great, sometimes as much as seventy-five miles a day, so that seeds, fruits, masses of vegetation harboring small reptiles, or even large ones, as well as other terrestrial animals, need not be afloat long before they might safely be landed on the shores of the Galapagos." It may here be noted that Hooker (4), 256, has shown that a large proportion of the plants of the Galapagos Islands are provided with special means of seed-dispersal, — a fact of interest in this connection.

But, however probable the pelagic origin of the islands seems from the data above presented, Dr. Baur has pointed out what has appeared to be a fatal defect in this theory. For, although it may be quite possible to explain the presence of plants and some animals upon islands of emergence, it is much more difficult if not impossible to explain upon the same theory the extraordinary biological relations between these islands themselves. An examination of the flora shows that many plants on the different islands are nearly related to each other, without being exactly the same. For instance, each of several islands has a peculiar species of *Scalesia*, a genus confined to the archipelago. There are also on



these islands several different forms of *Euphorbia viminea*, several very nearly related species of *Acalypha*, many habitually uniform species of *Borreria*, and of many other genera. In many instances these forms are confined to a single island, and in the majority of cases each form is more closely related to those of the other islands than to any continental ally. The same is true of the fauna, for the animals of particular groups, while exhibiting near affinity, show slight differences, which can in many cases be correlated with their occurrence upon different islands. Thus the flora and fauna of the islands are, to use Dr. Baur's expression, harmonic.

From this peculiar distribution, which seemed to him wholly inexplicable upon the emergence theory, Dr. Baur advanced the view that the Galapagos were islands of subsidence, once attached to the continent by some isthmian connection extending presumably to the Central American coast. In an enthusiastic presentation of this theory, Dr. Baur certainly advanced in support of it some as yet unanswered biological arguments. Thus, it explains perfectly the harmonic relations of the living forms upon the different islands; for if the islands were once united and then by subsidence separated, the remnants of their common flora and fauna, persisting upon the different islands, would have diverged not only from the continental types, but from each other. From the depth of ocean between the archipelago and the mainland, it would naturally be inferred that the islands were cut off from the continent before they were divided from each other. This, on the supposition of a gradual variation, would account not only for the divergence, for instance, of the genus *Scalesia* from its Mexican allies, but for the minor differences which are found between the different species of *Scalesia* on the several islands, where they occur; while, as we have seen, this harmonic distribution of very similar yet slightly differing forms on the different islands has appeared unaccountable, on the theory that these are islands of emergence casually seeded. For, to quote from a discussion of the forms of *Euphorbia viminea*:<sup>1</sup> "The question at once presents itself, if this archipelago is composed of islands of elevation, built up from the sea-floor independently by volcanic action, how has such a distribution been effected. If the vegetation has been derived from the mainland by the chance transportation of seeds, it is quite impossible to believe that each island has received a slightly different form of the same species, and we are forced to the much more natural assumption that racial and varietal divergence has come about after the introduction of the species upon the islands. Now, continuing

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<sup>1</sup> Rob. & Greenm. (1), 136.

the supposition that these are islands of elevation, the seeds of *Euphorbia viminea* must have reached them in one of two ways: either each of the nine islands, where we know the species now to occur, must have received its seed directly from the mainland, or, what is much more natural, seed must have reached one or more of the islands and from these spread to the rest. That the same species should have reached all these islands presupposes a considerable facility of transportation. But as soon as this is granted it is impossible to understand the highly individual development of the forms upon the different islands. For relative or complete isolation seems necessary to account for the racially divergent floras of the islands; and especially for the occurrence of only one form upon each island. It would thus appear necessary, in accounting for the present distribution, to assume that at one time in the remote past, the islands were either united, or at least that the channels which separate them were less formidable barriers to seed-transportation than at present, so that a general distribution of species could have been effected; and that subsequently, as the islands separated, or as the channels through some change of currents, or other cause, became less easily passed, an era of *much* greater isolation of the floras of the different islands came about. The divergence of character of the vegetation would then begin at once, and the otherwise unaccountable existence of a single and peculiar form upon each island would be readily intelligible. While not prepared to make any positive assertion regarding the probable origin of the islands, the authors fail to see in the hitherto generally accepted theory of elevation any satisfactory explanation for the harmonic yet divergent floras of the different members of the group."

Finally, for the subsidence theory, it must be admitted that the direct geological arguments for the elevation of the islands are not so forcible as they at first appear. Thus, as Baur has pointed out, the fact that all parts of the islands now visible are volcanic proves little; for if the Andes were sunk until only equivalent land areas remained, they too would appear wholly volcanic; and as to the recent elevation of the South American coast, that, as I am informed by Professor W. M. Davis, is no conclusive proof that areas five hundred miles to the seaward have suffered like elevation or, indeed, that they have not been simultaneously subjected to a sort of counter-balancing subsidence.

Such, in brief, have been the arguments advanced on both sides regarding the origin of the Galapagos Islands. During a re-examination of the whole vascular flora of the islands, I have sought further light upon this question, and now find the peculiar distribution of the plants

less difficult to account for on the emergence theory than it seemed when the Baur plants were studied some years ago.

Let us consider theoretically what would be likely to happen to a plant casually introduced in a pelagic archipelago, where no plant of its particular affinity had previously found its way. Let us suppose, for instance, that the ancestral form of *Euphorbia viminea* reached Chatham Island from the continent, and that conditions of seed-transportation were such that subsequent seedings from the mainland would not be likely to happen oftener on the average than once in thirty, fifty, or perhaps one hundred years, — no unreasonable assumption. Now, it is known from observation that a plant introduced into a new region can overrun considerable territory and increase to thousands of individuals, even in a shorter space of time. It is further likely that a plant established upon such an island would be at once exposed to modifying influences and tend toward the formation of a new race particularly suited to its altered environment. Whether this were effected by direct influence or by natural selection is not significant in this case. In the interval between the first and second seeding the change would probably be very slight and taxonomically imperceptible, but that some modification would have taken place seems likely. It is clear that the second and subsequent seedings of the same island by the same species from the continent would tend by the infusion of pure stock to reclaim the incipient insular variation to the typical continental form of the species. But to see how great or rather how slight the influence of these later seedings would be, it is only necessary to consider the numerical relation of both forms. The descendants of the first immigrant might well have increased to many thousands of (slightly altered) individuals before the second seed arrived from the mainland. Thus the reclaiming influence of this second immigrant would not be as one to one but as one against thousands, that is to say, virtually nil. Of course, it might be thought that as the first seed increased in a few years to thousands of individuals, the second might do so likewise, so that their influence would after all be not very unequal. This, however, could scarcely happen for two reasons. In the first place the original seed would have found in the island (before uninhabited by any near relative) a fresh terrain, giving it an opportunity to multiply rapidly. The second immigrant, however, would find its proper habitat on the island no longer free for settlement, but largely if not entirely occupied by countless individuals of a very nearly related stock. It could scarcely fail to cross repeatedly with the insular form and quickly merge into it, the more so because the descend-

ants of the second seed would at once be subjected to the same modifying influences that had affected those of the first.

It is thus clear that the insular form, having once started its divergence from the continental type, would be likely to differentiate itself more and more and not be much affected by the occasional arrival of scattered and isolated seeds from the continent. Furthermore, if seeds of the Chatham form were by any chance carried to other islands of the archipelago, further specialized races would be almost certain to arise bearing much the same relation to that of Chatham that it bore to the continental form, and quite as little affected by subsequent seedings. Thus unchecked, the races would have every opportunity to develop into more and more highly differentiated forms, varieties, and ultimately into well-marked species characteristic of particular islands.

This may all seem purely hypothetical, but it will be seen that the conclusions rest upon only two very natural premises, namely, that seed-transference between the mainland and the islands or between the islands themselves, does not occur in the case of particular plants oftener, on the average, than once in several years, and in the second place that plants have multiplied on the islands as rapidly as they have frequently been observed to multiply elsewhere. When these two not unreasonable postulates are admitted, it is clearly no harder to account for the existence of a "harmonic" flora on islands of emergence than of subsidence. Indeed, it is what is to be expected in an archipelago of either kind where seed-transference is relatively rare. That this condition obtains in the case of the Galapagos is clearly shown by the existing diversity in the floras of the different islands, — a condition which could not continue if seed-transference were very common between the islands. The fact that it is not more frequent is perhaps sufficiently explained by the arid and sterile shores, which would certainly offer to most seeds washed thither by oceanic currents an exceedingly poor chance of surviving.

The great existing difference between the Galapageian flora as a whole and that of tropical America is doubtless due not only to the differentiation of the insular forms, but also and perhaps in a considerable degree to changes which have been simultaneously going on in the continental flora itself. Thus the ancestral forms of many Galapageian plants, for instance of the above mentioned *Euphorbia viminea* (which might reasonably be sought in the deserts of Peru), have probably failed to persist at all upon the mainland. The fact that the florulae of the several islands are on the whole much more like each other than any one of them is like any part of the continental flora is perhaps

sufficiently explained by the relative nearness of the islands to each other, but it may well be due in part to the circumstance that these insular florulae have in common been protected from much of the change which has, through a sharper competition in the larger flora of the mainland, been forced upon the vegetation of the adjacent parts of the continent. In this matter again insular floras would fare alike, whether the islands they inhabited were the result of emergence or subsidence.

During the first years, or probably centuries, in the history of islands of emergence their floras, made up as they must be of heterogeneous elements which chance has brought to their shores, would be very unlike the far more homogeneous floras persisting on islands of subsidence; but after islands of each kind had attained considerable age, — that is an age sufficient to have given rise to a flora as specialized as that which now exists on the Galapagos, it is not likely that their floras would show any marked distinction, for, as we have seen, the development would not be unlike in the two cases. Although this negative result is in a way disappointing, it is certainly much better to admit a nullity of botanical evidence in regard to this interesting question than to attribute to the "harmonic" flora of these islands an historic meaning which it may not possess.

There is one point, however, from which botanical evidence can be derived which has a certain bearing upon this matter, namely, the relation which the proximity of the different islands bears to likeness in their florulae. The islands are so different in altitude, climate, and consequent fertility, that diversity in their vegetation is by no means surprising; but the difference certainly reaches a higher degree than we should expect. Thus, the common element between any two of these islands rarely exceeds 75 per cent and is often less than 50 per cent, sinking in some cases to nothing. Of course it is not unlikely that these differences may in some instances be more apparent than real owing to imperfect exploration, and it is probable that further collecting will show at least a small common element between each two of the islands. However, the differences in the recorded floras of the larger repeatedly visited islands cannot be due to our ignorance. Indeed, each new exploration brings quite as much material to demonstrate their diversity as their likeness. The most noteworthy feature of these differences is not, however, their extent, but rather the fact that for the most part they stand in no relation to the distance of the islands from each other or to the depth of the intervening channels. Thus the florulae of Albemarle and Chatham at opposite sides of the archipelago are more

alike than either is to that of the intervening Indefatigable; Jervis lying near James has a greater common floral element with the more distant Charles; the florulae of the Seymour Islands have a greater number of plants in common with Charles, Chatham, and Albemarle than with Indefatigable, of which the Seymour Islands are merely a detached spur. Although a high percentage of ferns has been recorded on James, not a single representative of this group has thus far been found on the adjacent Indefatigable. The common floral element between Duncan and the relatively remote Chatham is greater than with any of the three large islands, James, Indefatigable, and Albemarle, which to a considerable extent surround it. In fact, the only cases in which it appears that proximity between two islands has brought about any marked similarity on their floras are on the one hand Narborough and Albemarle, and on the other Gardner and Charles, and even in the former of these pairs, the likeness is by no means close, for not over 71 per cent of the plants of Narborough have been observed on Albemarle.

These anomalies in the different florulae must find their explanation in peculiarities of climate and soil, together with an element of chance — arising partly from imperfect exploration, and partly from the accidents of seed-dispersal. Although they are not fully explained by the theory that these are islands of emergence casually seeded, they are much less in accord with the Baur theory of subsidence; for, were the florulae remnants of a common flora persisting upon islands separated by gradual subsidence, it is evident that those islands would possess the most floral similarity which were nearest together and divided by the shallowest channels, since these would have been separated from each other more recently than the remoter islands, which are cut off by a greater depth of ocean. As we find no such relation prevailing in the Galapagos Islands, but have observed just the reverse, namely, that the more distant islands, separated by relatively deep channels, often show greater floral similarity than the nearer ones, it is necessary to conclude that the botanical evidence, so far as it has yet been made out, is opposed rather than favorable to the subsidence theory.

#### ADDENDA.

*Plants collected on the Galapagos Islands by Dr. Franz Steindachner  
of the Hassler Expedition.*

After the greater part of the present paper was in type, I received through the kindness of Dr. A. Zahlbruckner and Dr. A. Heimerl of



Vienna, a manuscript list of the specimens of plants collected on the Galapagos Islands in 1872 by Dr. Steindachner and now deposited in the Naturhistorisches Hofmuseum in Vienna. These plants were gathered rather as souvenirs of a peculiar flora than as scientific specimens, and many are fragmentary. The list at hand includes the pteridophytes (nos. 21 and 22) and spermatophytes (nos. 23 to 116). The first twenty numbers seem to have been applied to thallophytes and bryophytes, but these are not listed. The only plants mentioned which are not included in the above flora are *Tribulus terrestris*, L., *Crotalaria incana*, L., and *Rhynchosia Senna*, Gill. I have little doubt that the first of these is what Andersson has called *T. sericeus*, a plant which is too near to *T. terrestris* for very satisfactory distinction. Dr. Zahlbruckner writes that the labels furnish no data as to the particular islands upon which the plants were collected. The only new species among Dr. Steindachner's plants was *Tillandsia insularis*, Mez.

*Plants collected by Messrs. Snodgrass and Heller on Cocos Island of the Pacific.*<sup>1</sup>

*Leptogium azureum* (Ach.) Mont.<sup>2</sup>

*Macrolejeunea subsimplex* (Mont.) Schiffn.<sup>3</sup>

*Plagiochila Anderssonii*, Angstr.<sup>3</sup>

*Platylejeunea pogonoptera* (Spruce) Evans (*Lejeunea* [*Platy-Lej.*] *pogonoptera*, Spruce).<sup>3</sup>

*Pilotrichum asperifolium*, Mitt.<sup>2</sup>

*Rhizogonium spiniforme* (L.) Br.<sup>2</sup>

*Acrostichum caudatum*, Hook. (no. 959).

*Adiantum intermedium*, Sw. (no. 967).

*Alsophila armata*, Presl (no. 964).

*Asplenium rhizophyllum*, Kunze (no. 954).

*Dicksonia cicutaria*, Sw. (no. 952).

*Gymnogramme calomelanos*, Kaulf. (no. 970).

*Nephrolepis acuta*, Presl (no. 953).

*Polypodium aureum*, L. (no. 969).

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<sup>1</sup> With the collaboration of Professor H. Pittier, the author is preparing a catalogue to bring together the now scattered references to the flora of Cocos Island, and unite with them the data derived from recent and very interesting collections. In this subsequent paper the species here listed will be treated in greater detail.

<sup>2</sup> Determined by W. G. Farlow.

<sup>3</sup> Determined by A. W. Evans.

*Polypodium chnoodes*, Spreng. (no. 948).

" *lanceolatum*, L. (no. 958).

" *Phyllitidis*, L. (no. 965).

*Trichomanes Prieurii*, Kunze (no. 955).

" *pyxidiferum*, L. (no. 956).

" *radicans*, Sw. (no. 973).

*Selaginella stenophylla*, A. Br. (no. 972).

*Lycopodium mollicomum*, Mart. (no. 971).

*Chloris paniculata*, Scribner, nov. sp., "perennans dense caespitosa 3-5 dm. alta foliis longis angustis, inflorescentia dense paniculata 8-10 cm. longa; vaginis carinatis compressis laxis; laminis foliorum linearibus 3-4 mm. latis longe attenuatis serrulatis praeter marginis scabrae glaber, foliis inferioribus numerosis in specimine inspecta culmo aequantibus vel etiam superantibus; paniculae simplicis ramis numerosis congestis adscendentibus circa 2 cm. longis superioribus brevioribus, axe principali pubescenti rachide secundario valde scabro spiculas unilaterales valde imbricatas biseriales gerente; spiculis 2.5-3 mm. longis, glumis sterilibus lanceolatis acutis translucetibus uninervatis carina scabra, prima circa 1.5 mm. secunda circa 2.5 mm. longa, gluma fertili oblongo-lanceolata truncata 2-2.3 mm. longa in margine carinaeque scabra, nervo medio in setam scabridam 1-1.5 mm. longam producto; callo dense barbato, capillis longissimis circa 1 mm. aequantibus: flosculo sterili 1 mm. longo vel breviori setam suae longitudinis gerente." — NÚEZ ISL. (an islet near Cocos Isl.): abundant in bunches 3-5 dm. in diameter, covering considerable areas on cliffs near the coast, *Snodgrass & Heller*, no. 968 (hb. Gr., hb. U. S. Dept. Agric.). Endemic. "This grass is somewhat anomalous, having the inflorescence of *Leptochloa*, suggesting that of *L. scabra*, while the spikelets are those of *Chloris*, to which it has seemed best to refer it."

*Paspalum conjugatum*, Berg. (no. 943).

" *platycaule*, Poir. (no. 942).

*Calyptracarya Palmetto*, Nees (no. 947).

*Cyperus sphacelatus*, Rottb. (no. 946).

*Hypolytrum* sp. (no. 945).

*Kyllinga nudiceps*, C. B. Clarke, nov. sp., "culmis caespitosis, filiformibus; foliis nullis; spica 1, parva, globosa, pallida; bracteis spica brevioribus —

*Rhizoma visum* vix 5 mm. longum. Culmi 2-3 dm. longi. Vaginae pallide bruneae, glandulis rubris laete inspersae, apice in altero latere productae, non virides. Spica 5 mm. in diam., multispiculosa; bractea

ima interdum 4 mm. longa, apice lineari viridi, saepius inconspicua. Spicula 1-flora (omnino ut *K. odoratae*, Vahl), supra 2 glumas imas vacuas caduca. Nux obovoidea, lateraliter compressa, brunea; styli basis non dilatata, rami 2 lineares." — Cocos Isl.: *Snodgrass & Heller*, no. 944 (hb. Gr.), type; also on shady cliffs, Wafer Bay, *Pittier*, no. 16272 (hb. Gr.)

*Catopsis aloides*, Baker (no. 962).

*Peperomia nigro-punctata*, Miq. (no. 957).

*Hibiscus tiliaceus*, L. (no. 961).

*Conostegia lasiopoda*, Benth. (no. 963).

*Ossea macrophylla*, Cogn. (no. 951).

*Jussieua linifolia*, Vahl (no. 950).

*Ardisia cuspidata*, Benth. (no. 949).

*Rolandra argentea*, Rottb. (no. 960).

*Wedelia paludosa*, DC. (no. 966).

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#### EXPLANATION OF PLATES.

PLATE 1. Fig. 1, *Phoradendron uncinatum*, Robinson, n. sp. Fig. 2, *Bursera malacophylla*, Robinson, n. sp. Fig. 3, fruit of ray-flower of *Acanthospermum microcarpum*, Robinson, n. sp. Fig. 4, fruit of ray-flower in *Acanthospermum hispidum*, DC. Figs. 5, 6, 7, *Telanthera Helleri*, Robinson, n. sp. Fig. 8, leaf of *Telanthera Helleri*, var. *obtusior*, Robinson, n. var. Fig. 9, *Scalesia Helleri*, Robinson, n. sp. Fig. 10, the same, a pale of the disk.

PLATE 2. Fig. 1, *Pilea Baurii*, Robinson, n. sp. Fig. 2, *Telanthera Snodgrassii*, Robinson, n. sp. Fig. 3, *Acnistus insularis*, Robinson, n. sp. Fig. 4, *Bidens refracta*, Brandege. Fig. 5, *Euphorbia nesiotica*, Robinson, n. sp.

PLATE 3. Fig. 1, *Scalesia Hopkinsii*, Robinson, n. sp. Figs. 2, 3, *Scalesia microcephala*, Robinson, n. sp. Figs. 4, 5, 6, 7, *Scalesia narbonensis*, Robinson, n. sp. Fig. 8, *Scalesia Snodgrassii*, Robinson, n. sp.

